

PUBLIC NOTICE

Issue Date: May 23, 2013

Proposal to Renew Title V Permit to Operate NCU 097-12 for Blue Lake Power, LLC

The North Coast Unified Air Quality Management District (District) is the local agency that regulates stationary sources of air pollution within the California counties of Humboldt, Del Norte, and Trinity. This public notice is issued by the District's Air Pollution Control Officer (APCO) in accordance with District Regulation V, Rule 503 (Section 5.0).

Title V Permits to Operate (PTOs) are issued to sources which have potential emissions in amounts greater than major source thresholds, and are issued for a term of five (5) years. Blue Lake Power, LLC. has applied for a renewal of their existing PTO (NCU 097-12) for equipment located at 200 Taylor Way, Blue Lake, CA 95525. The facility was constructed in 1986 and the Title V Permit was first issued in 1998. The primary function of the facility is to generate electricity for commercial distribution. The facility's boiler and associated support equipment are used to generate steam from the combustion of vegetative waste (wood chips/biomass). The annual criteria pollutant emissions are listed in the table below. No emission increases are proposed in the application.

Pollutant	Annual Emissions TPY (tons per year)	Change in Emissions TPY
Carbon Monoxide (CO)	810.3	0
Oxides of Nitrogen (NOx)	120.6	0
Oxides of Sulfur (SOx)	13.8	0
Particulate Matter (PM10)	32.4	0
Volatile Organic Carbon (VOC)	20.3	0

The District hereby gives notice of intent to take final action on the proposed PTO, after a 30-day public comment period beginning on the date of this notice. This public comment period allows interested members of the public to review the proposed PTO and provide written comments. Written comments must be received prior to the close of business on Wednesday July 3, 2013. The District will hold a public hearing on Tuesday, July 2, 2013 at 6 p.m. at the Blue Lake Grange, 110 Hatchery Rd, Blue Lake, CA 95525. The APCO will review and consider all comments prior to taking final action on the application.

The renewal application, proposed PTO, and District analysis are available for inspection at the District offices during normal business hours - Monday through Friday 9:00 a.m. to 12:00 p.m. and 1:00 p.m. to 4:00 p.m. Information is also posted on the District website at www.ncuaqmd.org. Should you have a question or require additional information contact Jason L. Davis at (707) 443-3093. Public comments concerning this permit should be submitted to:

North Coast Unified Air Quality Management District
ATTN: Blue Lake Power , LLC Title V Renewal
2300 Myrtle Avenue
Eureka, CA 95501

**North Coast Unified Air Quality
Management District**
2300 Myrtle Avenue, Eureka, CA 95501
Telephone (707) 443-3093 FAX (707) 443-3099
<http://www.ncuaqmd.org>



ENGINEERING EVALUATION

Title V Federal Operating Permit Renewal

for

Blue Lake Power

APPLICATION NO.: **NCU 097-12**
EVALUATION DATE: **February 2013**
EVALUATION BY: **Jason L. Davis, Division Manager**

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FACILITY INFORMATION

Permit Issued To: **Blue Lake Power LLC**
1615 Continental Street, Suite 100
Redding, CA 96001

Plant site: **Blue Lake Power**
200 Taylor Way
PO Box 1158
Blue Lake, CA 95525

Responsible Official: **Glenn A. Zane, President**

Standard Industrial Classification (SIC): **4911**

DRAFT

INTRODUCTION

General

The North Coast Unified Air Quality Management District (District) is the local regulatory agency responsible for the enforcement of air quality regulations within the counties of Humboldt, Del Norte, and Trinity in northern California. The ambient air within the District meets or exceeds the Federal and State health protective standards for criteria pollutants with the exception of the State twenty-four hour standard for particulate matter ten microns in size and smaller (PM10). The District implements and enforces a State Implementation Plan approved Part 70 permit program which was last accepted by US EPA on January 1, 2004. Due to the nature and operations of the Blue Lake Power Plant (Facility), the Facility is subject to the requirements of District Rules 102 and 502, and accordingly, the responsible official of the Facility must obtain the proper permits prior to engaging in construction activities, and prior to operating equipment which emits air pollution.

Purpose and Scope of Evaluation

The purpose of this document is to provide a discussion of the proposed renewal of the Title V Permit To Operate issued to Blue Lake Power Company, LLC (BLP), dated March 18, 1998 for a facility located within the District. This document, along with the application submitted by the applicant and other supporting information contained in the project file, may be considered by the Air Pollution Control Officer during the permit decision making process. Action on a permit application results in either the issuance of a permit or in the denial of the application. If an application is approved, the permit subsequently issued serves as the APCO's final decision.

Title V Permit to Operate 096-12 was issued with a standard five (5) year term and was set to expire on March 18, 2003. Because BLP filed a complete application for renewal of the Title V Federal Operating Permit six months prior to the end of the first and of the second renewal periods in compliance with District Regulation 5 Rule 405(b), the Title V Operating Permit renewal date was extended. The extension expires when the District takes final action on the BLP's permit renewal application [District Rule 502 §1.2]. Once approved, the next permit expiration date will be March 18, 2018. In the future, a completed Title V permit application for renewal should be received by September 13, 2016 (18 months prior to the expiration date of the Title V permit) and no later than September 13, 2017 (6 months prior to the expiration date of the Title V permit).

Permit History

Initial Permit, March 18, 1998
Minor Modification August 10, 1999

FACILITY DESCRIPTION

The Facility is located within an industrial park in Blue Lake, an incorporated city with a population of 1,253¹. The industrial park is adjacent to the Blue Lake Rancheria and is approximately 20 miles from Eureka, California the closest urbanized area. The climate of the Humboldt Bay inland region is characterized as Mediterranean; consisting of mild and rainy winters, and cool and dry summers. The all-time highest and lowest temperatures recorded in Eureka are 87 °F on October 26, 1993, and 20 °F on January 14, 1888 respectively. The annually average number of days when temperatures fall below freezing is 1.7. The region experiences coastal influence fog year round and the annual average precipitation is 39.5 inches². The seasonal prevailing wind directions are from the northwest and southeast.

The Facility is located in the Blue Lake industrial park at 200 Taylor Way and is bordered to the north by Taylor Way and to the south by the Mad River. The facility was constructed on contiguous parcel(s) owned by the City of Blue Lake, totaling 22 acres with approximately 15 acres being actively utilized [*Appendix 1 - Facility Location & Proximity Maps*]. The Facility principally consists of a wood waste and propane gas fired boiler which is used to generate steam to produce electricity. The Facility sells electricity under a Public Utility Regulatory Policies Act of 1978 contract to San Diego Gas & Electric Company (SDG&E). The Facility functions as a “base load” facility generating at near maximum capacity throughout the year. BLP has not applied for alternative operating scenarios.

Due to its size, equipment configuration, date of construction, and quantity of emissions, the Facility is subject to several Federal Clean Air Act Programs including New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), Prevention of Significant Deterioration (PSD), and Title V Operating Permit Program.

EQUIPMENT DESCRIPTION

The District has reviewed the list of equipment operated at the Facility and has determined which devices are subject to the requirements of Rule 102 and 502 differentiating them from those which are exempt from requirements to obtain Authority to Construct and Permits to Operate. A facility diagram is found below with key components identified.

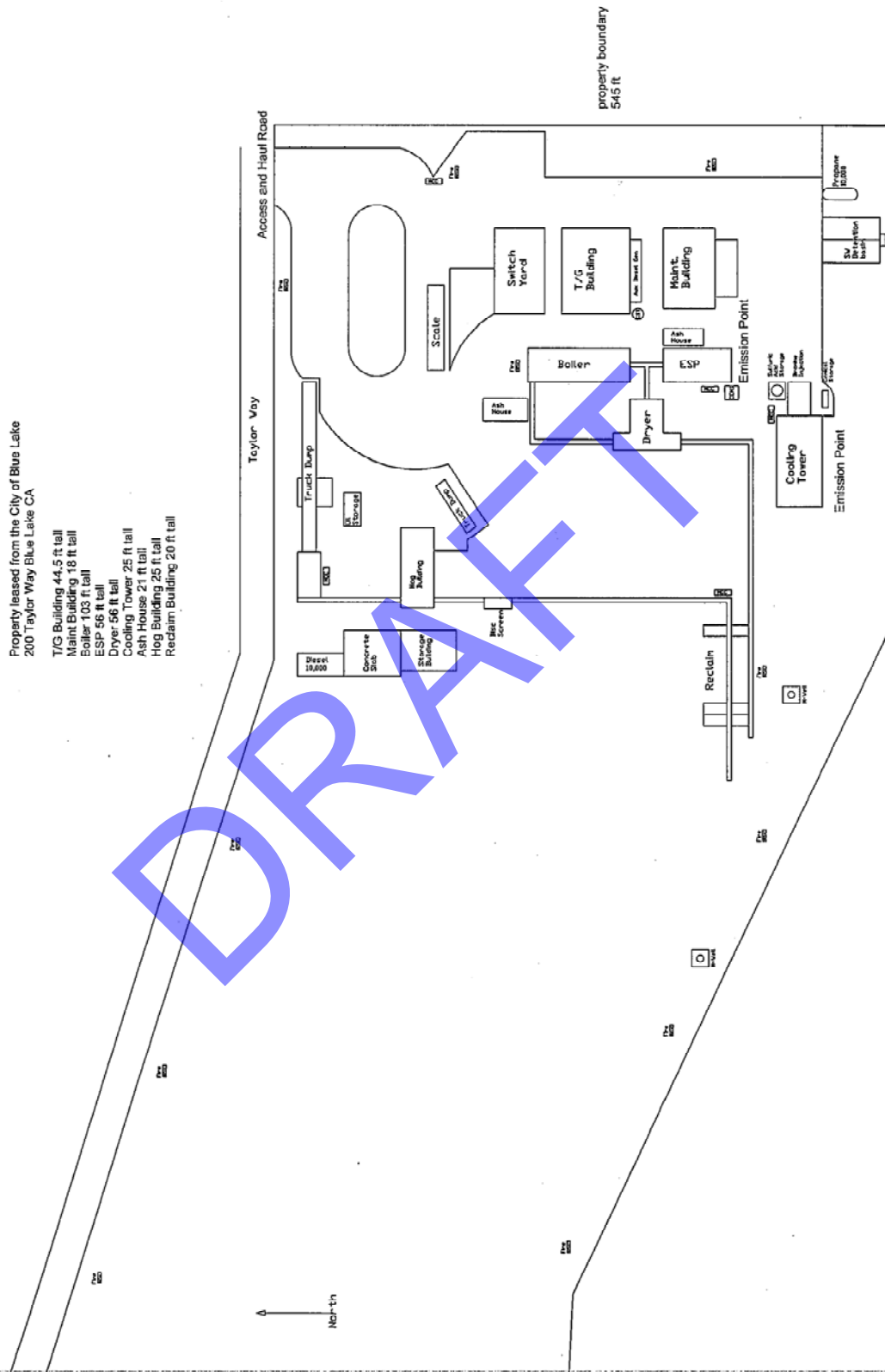
¹ 2010 US Census Data.

² Wikipedia, http://en.wikipedia.org/wiki/Eureka,_Ca (February 2009).

1. Plot Plan and Location Information:

Property leased from the City of Blue Lake
 200 Taylor Way Blue Lake CA

T/G Building 44.5 ft tall
 Maint Building 18 ft tall
 Boiler 103 ft tall
 ESP 56 ft tall
 Dryer 56 ft tall
 Cooling Tower 25 ft tall
 Ash House 21 ft tall
 Hog Building 25 ft tall
 Reclaim Building 20 ft tall



Emission Sources

Blue Lake Power, LLC operates a wood waste fired boiler rated at 105,000 pounds of steam/hour (185 MMBtu/hour) to produce electricity for sale to SDG&E and other customers. The boiler is a stoker type, bottom-supported boiler with a traveling grate, and a loose tube and tile setting in the furnace with a tile setting in the boiler bank area. There is an economizer after the boiler bank and a tubular air heater. The boiler package was supplied by Zurn Industries. The Facility's steam condenser unit is rated at 90,000 lbs of steam per hour, and the steam turbine rated at 11.7 MW. The parasitic load is equivalent to approximately 1.5 MW leaving 10.2 MW net available to the grid.

The primary fuel consists of woody biomass typically obtained from forest lands within a 150 mile radius of the Facility. The acceptable operational range identified by the boiler manufacturer for fuel moisture content within the furnace is 30% to 50%. The operation of the fuel pre-dryer allows the Facility to accept fuel with a moisture content as high as 60% before it enters the pre-dryer. A single 80 million BTU/hour propane gas burner, manufactured by Zurn, is used to supply heat for startups. Particulate matter from the wood waste combustion process is controlled with a mechanical multi-stage cyclone followed by an electrostatic precipitator. Nitrogen oxides (NOx) and carbon monoxide (CO) are controlled by a forced over-fire air system. Due to its date of construction and size, this device is subject to Federal Standards of Performance for New Stationary Sources Subpart Db [40 CFR 60.40b]. The device is also subject to the National Emission Standards for Hazardous Air Pollutants for area sources: Industrial, Commercial, and Institutional Boilers [40 CFR 63 subpart JJJJJ].

The principle air pollutants emitted from the Facility are CO, NOx, and particulate matter. Carbon dioxide (CO₂) and other combustion-derived greenhouse gases are also emitted. District issued Title V operating permits contain both short term and long term emission limits for all regulated pollutants. For the Facility's boiler unit, combustion efficiency requirements for CO and particulate matter are based on 3 hour averages while a tiered monthly average based applies for NOx. As of July 1, 1999, Blue Lake Power, LLC was required to have CEMS for carbon monoxide, nitrogen oxides and oxygen to better monitor emissions from the wood fired boiler operation. Because continuous emissions monitors (CEMS) are used to verify compliance with Best Available Control Technology emission limits, annual Relative Accuracy Test Audits (RATA) are required.

In order to provide a source of electricity during emergency situations, and to provide mechanical power to pump water to cool the boiler, the Facility operates two diesel fired compression ignition engines. Because the engines are used for emergency purposes and because the Facility is considered to be an area source of Hazardous Air Pollutants (HAPs), the Facility qualifies as an affected source under the Federal National Emission Standards for Hazardous Air Pollutants Subpart ZZZZ [40 CFR 63.6580]. As a result, additional work practices recordkeeping and reporting requirements apply.

The Facility receives wood waste via bulk truck load and has the ability to store approximately 150,000 tons of wood waste in the 6 acre area immediately to the west of the boiler unit. A "truck dump", a series of conveyors and fuel hoppers, rubber tired wheel loaders, and various "rolling stock" are used to transport wood waste within the Facility. Solid combustion byproducts (ash) collected from the electrostatic precipitator

are temporarily stored on site. All roadways and vehicular traffic areas near the Facility buildings are paved with asphalt. The log deck and chip storage areas are unpaved and are a potential source of fugitive dust.

Permitted Devices

The following Tables list the equipment units, or emitting devices, which are required to be under permit.

Device S-1 Manufacturer Type Rating – Output Rating – Input Fuel Type Supplemental Burner Fuel Type Control Equipment Additional Equipment	Boiler (Steam Generator) Zurn Corporation Traveling grate stoker 105,000 pounds of steam/hour ≈11.7MW gross electricity generation capacity 185 MMBtu/hour Wood Waste Zurn Industries Model MJ-24, rated at 80 MMBtu/hour Propane Mechanical Multiclone Collector then ESP None
Device S-2 Model Size Year Heat Input Rate (HHV) SIC SCC	CI Diesel Engine – (Emergency Generator) Cummins, Model Big Cam 6-cylinder 335Hp (250kW) 1991 34.3 MMBtu/hr (12.25 gal/hr) 4911 20100102
Device S-3 Model Size Year Heat Input Rate (HHV) SIC SCC	CI Diesel Engine – (Fire Pump) Cummins, Model V-378 FA 137 Hp (100kW) 1986 19.18 MMBtu/hr (6.85 gal/hr) 4911 20100102

Insignificant Sources

The following Table lists equipment and sources of pollutants for which a permit is not required, however, the emissions from these sources are inventoried and evaluated for regulatory purposes.

Exempt Equipment	SCC	Equipment Description	Reportable Units
Cooling Tower	38500101	Induced Draft	Gallons of Water Cooled
Fuel Dispensing Facility	40600651	Diesel fuel pumps	Gallons of Fuel Dispensed
Fuel Storage	40400316	Aboveground Diesel tanks	Gallons of Fuel Throughput
Lube Oil Tanks	40400313	55 gallon drums (used oil)	Gallons of oil Throughput
Oil/Water Separator	50300713	Oil/Water Separator	Gallons of Water Treated

Exempt Equipment	SCC	Equipment Description	Reportable Units
Confined Solvent and Paint Use	40200110	General Operations (facility wide)	Gallons of Solvent/Paint Used
Welding Shop	30900500	Welding Shop	Pounds of Welding Rod Used

Control Equipment

Control Devices

The Facility employs several different strategies to control air pollution including the use of combustion equipment, specialized control devices, and best management practices. The following Tables list the pollution control equipment installed to reduce the quantity of pollution released by the emitting units and devices.

Device Manufacturer Model Pollutants Controlled Source Controlled	Mechanical Multiclone Collector Zurn Air Systems/Industries MTSA-262-9CYT-A-NRV-STD PM Device S-1 (Boiler)
Device Manufacturer Size Flow rate Max Inlet Loading Max Outlet Loading Design efficiency Opacity Guarantee Rating Pollutants controlled Source Controlled	Electrostatic Precipitator (ESP) Research Cottrell Corporation 21,002 square feet collection plate area with 2 transformer/rectifier fields 60,134 scfm 0.90 grains/dscf 0.018 grains/dscf (mfr mass emission guarantee) 98 % efficient (mfr efficiency guarantee) < 20% (mfr outlet opacity guarantee) 55 KV and 500mA each PM10 Device S-1 (Boiler)
Device Manufacturer Description Operation Pollutants controlled Source Controlled	Forced Overfire Air System Zurn Air System Fan and piping which takes a portion of the air from the air heater that would otherwise be injected through the bottom of the combustion chamber and redirects it to the upper portion of the combustion chamber. Operated so as to optimize the combustion and minimize CO emissions. It is adjusted by the boiler operator based on monitoring of CO levels and visual observation of combustion. CO, NOx Device S-1 (Boiler)

The boiler is the primary source of air pollutants at the Facility. A series of control and combustion efficiency systems are installed to minimize emissions when firing on wood waste. The combustion system is designed to maximize Btu yield per unit of fuel fired and consists of a forced over-fire air system and an under-grate air system. The configuration allows multistage combustion creating a series of combustion zones allowing for maximum oxidization of fuel. When combustion temperatures are maintained above 1475°F and excess air is limited to less than 1%, the formation of NO₂ is minimized³.

The forced over-fire air system consists of fans and piping which takes a portion of the air from the air heater that would otherwise be injected through the bottom of the combustion chamber, and redirects it to the upper portion of the chamber. The turbulence created increases the amount of time the air stream remains in the combustion zone. The system is operated so as to optimize combustion and minimize CO emissions; primarily through the introduction of excess air. It is adjusted by the boiler operator based on monitoring of CO levels and visual observation of combustion.

After exiting the firing chamber, the exhaust stream enters the multi-clone collection system. Such systems are commonly used with boilers of this configuration to “pre-treat” the exhaust stream thereby reducing pollutant load on the ESP⁴. This device consists of a series of conical shaped cylinders - cyclones. Exhaust gas is funneled through the series of cyclones taking advantage of the centrifugal force generated to remove particulates from the gas stream. The particulate matter collected is composed primarily of sand particles and fly ash.

After exiting the multi-clone collection system, the exhaust stream enters the Electrostatic Precipitator (ESP) where additional collection of particulate matter 10 microns in size and smaller is performed. Operating efficiencies in excess of 98% have been achieved by these types of devices⁵ for the removal of inorganic materials – primarily metals in this case. Removal is accomplished by passing the exhaust stream between a series of metal plates electrically energized with very high-voltage. As the particles pass through the magnetic (coronal) field created by the energized plates, they become electrically charged and deposit themselves (precipitate) on the collector walls. To dislodge the accumulation of dust, the plates are momentarily de-energized and then are physically struck by a hammer (rapped) which causes the dust (precipitate) to dislodge and fall to the hopper bin below. The collected material is then moved via an auger screw to the precipitator ash bin⁶.

The ESP installed at this Facility has two sections of collector plates (fields), electrical elements (rated at 55 KV and 500 mA each), and approximately 30 rappers that knock the precipitate off the plates. Evaluation of air flow, temperature, and pollutant loading for this boiler configuration was considered in the original Authority To Construct evaluation. Monitoring of the ESP consists of recording of voltages as well as monitoring an indicator light associated with the system of rappers. The transformer /

³ AP 42, Volume 1: Stationary Point and Area Sources, Chapter 1 External Combustion Sources, Section 1.6.

⁴ US EPA Air Pollution Technology Fact Sheet, Electrostatic Precipitator EPA-452/F-03-028, p.3.

⁵ EPA-452/F-03-028, p.1.

⁶ EPA-452/F-03-028, p.3.

rectifier sets are regulated by a GE SQ-300i controller which records the primary current, secondary current, secondary minimum, average and maximum voltages, sparks per minute, SCR firing angle, input and input amps, and the average form factor on a frequency of six minute intervals. The rapper control panel allows the operator to control of intensity and timing of rapping in order to maximize the effectiveness of the ESP. The control module records the actuation time and current draw during the firing sequence for each rapper element. When a malfunction occurs, appropriate action is immediately taken and the action documented.

When asked to describe fly ash management at the facility, a BLP official responded:

"Fly ash from the furnace is collected by a series of enclosed conveyors and transported to the facility's ash storage house. The ash house encloses the final conveyor in the system and a 20 cubic yard dumpster used to collect the ash. Water is sprayed onto the ash as it exits from the last conveyor and is deposited into the dumpster. When the dumpster is filled, it is removed from the ash house, covered as required, and a fresh dumpster is placed in service. The status of the ash bin and water spray system is regularly monitored by the facility operators."

*At rated operating conditions, the facility generates approximately 10 to 12 tons of fly ash per day. The actual amount is variable and is highly dependent on the quality of the fuel being fired. While operating full time, the expected ash production is from 300 to 360 tons per month (or about 3,600 to 4,300 tons per year)."*⁷

Site inspection confirmed the description provided. The methods utilized appear to be sufficient to control the fugitive dust created from the intra-facility transport of fly ash. Additional best management practices for the collection and removal of the fly ash from the facility are discussed in the next section.

Best Management Practices

To minimize emissions of particulate matter, the following best management practices to control the release of fugitive dust have been identified as appropriate for this Facility. On vehicular roadways and storage areas, periodic clean-up (sweeping) of wood chips / wood waste, installation of wind screens and netting designed to minimize wind disturbances of the chip storage piles. The use of dust palliatives will be limited as the area of unpaved surfaces is minimal. The utilization of trailer tarps during transport and limitation of vehicle speeds to less than 15 miles per hour are recognized as fugitive dust best management practices [District Rule 104 §4.0].

Monitoring Equipment

COMs & CEMs

BLP installed a continuous emissions monitoring system (CEMS) in 1999 consisting of analyzers for carbon dioxide (CO), oxides of nitrogen (NO_x), and oxygen (O₂), as well as continuous opacity monitoring equipment (COMs) measuring visible emissions.

⁷ Email communication with R. Patterson, 1/31/2013

Sampling data is transmitted to and then stored in an integrated data analysis system (DAS). The DAS is currently programmed to compute hourly and daily averages for CO, NO_x, and O₂. The DAS computes 6-minute averages of the COMs data, necessary for determining compliance with the visible emissions limits. The DAS is programmed to provide daily reports as well as monthly summaries.

The following Tables list the monitoring equipment installed to sample and record the quantity of pollution released by the emitting units and devices. The precision, accuracy, and data collection parameters are specified by the applicable NSPS subparts discussed more fully in the NSPS section.

Device	CEMS System
Manufacturer	Custom Instrumentation Services Corporation Continuous Emission Monitoring System
Model	System No. 10004050, Job No. 14162

Pollutant	Manufacturer/ Model	Part Number
CO	Siemens 6E	7MB2121-18G60-OAA1
NO _x	Rosemount 951 C	95130000
O ₂	Servomex 1440C	1440C-10-99-0110
Opacity	Durag D-R290	-

Measuring Devices

In order to ensure compliance with emission limitations, a series of operational parameters are to be monitored, and the data collected and reported. Required measuring devices are listed below. The operation, maintenance, calibration frequencies are to be identified in the Facility's Device Operational and Maintenance Plans.

Device S-1

Steam Gauge – *pounds of steam per hour*
Wood Waste Feed Rate - *tons of wood per hour*
Propane Fuel Meter - *gallons per hour*

Multi-clones

Differential Pressure – *inches of water column*

Electrostatic Precipitator

Primary & Secondary Voltage and Primary & Secondary Amperage
Spark Rate – *events per minute*
Rapping Frequency – *events per 15 minute intervals*
Data Logger – *3 month storage capacity*

Device S-2 and S-3

Engine Hour Meters – *non-resettable, minimum display capability "9,999"*

Prohibited Equipment

Pollutant dispersion analyses are performed based upon known boiler stack parameters. Prior to the installation of equipment or devices which may restrict or modify the exhaust gas flow from the main boiler exhaust stack, the BLP shall obtain

authorization from the District. Rain caps or similar devices which may impede gas flow shall not be installed.

RULE APPLICABILITY

A review of Federal, State, and local regulations was performed to determine applicability based upon the operation equipment and mechanical processes which occur at the Facility. The results of the search are listed in the tables below and are discussed in the sections that follow.

Federally Enforceable Rules & Regulations

Citation	Description	Adoption Date
Regulation I, Rule 102	Permit Requirements	5-19-05
Regulation I, Rule 110	New Source Review Standards	5-19-05
Regulation I, Rule 103	Action on Applications	5-19-05
Regulation I, Rule 104.2	Visible Emissions	5-19-05
Regulation I, Rule 104.3	Particulate Matter	5-19-05
Regulation I, Rule 104.4	Fugitive Dust	5-19-05
Regulation IV, Rule 412	Major Source Assessment	5-19-05
Regulation V	Procedures for Issuing Permits to Operate for Sources Subject to Title V	5-19-05
NSPS	40 CFR 60 Subpart Db – Standards of Performance for Industrial, Commercial, and Institutional Steam Generating Units	Promulgated 12-16-1987
NESHAP	40 CFR 63 Subpart JJJJJJ Area Source Boilers	3-21-2011
NESHAP	40 CFR 63 Subpart ZZZZ – Stationary IC engines	06-15-2004
Regulation I, Rule 104.11	Federal New Source Performance Standards (NSPS)	5-19-05
CAM	40 CFR 64 - Compliance Assurance Monitoring	10-27-1997

Non-Federally Enforceable Rules & Regulations

Citation	Description	Adoption Date
Regulation I, Rule 104.5	Sulfur Oxide Emissions	5-19-05
Regulation IV, Rule 400	Stationary Source Permit Fees	5-19-05
Regulation IV, Rule 406	Title V Fees	5-19-05
Regulation IV, Rule 407	Air Toxic “Hot Spots” (AB2588) Fees	5-19-05
CCR Title 17 Section 93115	Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines	10-18-2007

NSPS

The U.S. EPA delegated authority to the District to implement and enforce select provisions of the New Source Performance Standards. Initial promulgation occurred on 12/16/1987 (52 FR47842) and was last amended on 7/7/2007 (69 FR 40773). After

review of the proposed equipment, it was determined that the NSPS general requirements [40 CFR 60.1 through §60.19] and the following Subparts apply.

40 CFR 60.40b Subpart Db

Standards of Performance for Industrial, Commercial, and Institutional Steam Generating Units This federal regulation limits the emission of oxides of sulfur, particulate, oxides of nitrogen, and opacity from commercial steam generating units with a heat input greater than 100 million BTU/hour which commenced construction after June 19th 1984.

Sulfur Oxides

Because the Facility did not commence construction, reconstruction, or modification after February 28, 2005, the Facility is not subject to sulfur oxide limitations of this Subpart [§60.42b(k)(1)]. No testing, monitoring, or reporting is required for this pollutant.

Particulate Matter

Because the Facility has a heat input capacity from wood which is greater than 30%, and was constructed between June 19th 1984 and February 28th 2005, particulate matter emissions are limited to 0.10 lb/MMBtu heat input [§60.40b(c)(1)]. §60.46b requires performance testing to be conducted at a frequency established by the District and requires the use of Methods 3A, 5, 9, and 19.

Nitrogen Oxides

Because the Facility has elected to accept a federally enforceable condition limiting propane gas consumption to less than 10% of the annual heat input capacity factor for the boiler, the nitrogen oxide limitations of §60.44b(d) do not apply [*§60.44b(d) limits NO_x to 0.30lb/MMBtu unless propane gas capacity is limited to less than 10%*]. The nitrogen oxide limitations of §60.44b (l) also do not apply for this reason; and because the boiler was not constructed nor reconstructed after July 9, 1997. For this Facility, an annual capacity factor of 10% for propane equates to a limitation of about 1,788,930 gallons of propane per calendar year.

Opacity

Because the Facility combusts wood, the opacity of the exhaust gases emitted shall not exhibit greater than 20 percent opacity (6 minute average), except for one 6 minute period per hour of not more than 27 percent opacity [§60.40b(f)]. Because the Facility is subject to an opacity standard, §60.48b (a) requires the installation of a COMs unit to measure opacity according to the requirements of 40 CFR 60 Subpart A.

COMs & CEMs

§60.48b requires an affected Facility which is subject to an opacity standard, to install, calibrate, maintain, and operate a COMs for measuring and recording the opacity exhaust gases. EPA Reference Method 9 must be performed annually. Even though the Facility qualifies as an affected facility under §60.44b (j), the Facility is not required to install a CEMs for NO_x or O₂. However, due to compliance issues in the late 1990's, the Facility was required to install CEMs for CO, NO_x, and O₂ to ensure compliance with emission limitations.

Notification, Recordkeeping, & Reporting

All initial notifications required pursuant to this Subpart are assumed to have been completed several years ago. All records required under this Subpart shall be maintained by the owner or operator for a period of 2 years following the date of such record [40 CFR 60.49b (o)]. Because the Facility qualifies as an affected facility under §60.44b (j), the following records for each steam generating unit operating day shall be maintained: calendar date, number of hours of operation, hourly steam load [60.49b(p)]. Because the Facility qualifies as an affected facility under §60.44b(j), the following records shall be submitted to the District: annual capacity factor over the previous 12 months, the results of any NO_x emission tests, hours of operation during the reporting period, hours of operation since the last NO_x test [§60.49b(q)].

40 CFR 60.4200 Subpart IIII

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Because the compression ignition engines in Devices S-2 and S-3 have a displacement less than 30 liters per cylinder and were installed before 2005, this Subpart does not apply.

NESHAP

The U.S. EPA delegated authority to the District to implement and enforce provisions of the Federal National Emission Standards for Hazardous Air Pollutants. After review of the proposed equipment and the Facility emission profile, NESHAP applicability was determined as follows. The Facility does not have the potential to emit greater than 10 tons of any one HAP nor 25 tons of any one HAP per year and so is considered to be an area source for purposes of NESHAP applicability..

40 CFR 63 Subpart JJJJJ

National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers. This regulation establishes emission and operating limitations for hazardous air pollutants (HAP) emitted from boilers located at area sources of HAPs. This subpart includes requirements to demonstrate initial and continuous compliance with the emission and work practice standards as well as specified emission reduction measures and management practices.

The affected source consists of an industrial boiler rated at greater than ten million BTU heap input per hour which generates greater than 15% of its heat input from the combustion of biomass. The boiler system is considered to be an existing source as construction commenced prior to June 4, 2010. The following requirements in Subpart JJJJJ apply.

Emission Limits

- There are none because the boiler is an existing unit fired on biomass.

Work Practice, Emission Reduction Measures, and Management Practices

- Biennial tune-up of the boiler [§63.11223] is required beginning December 31, 2012 [63.11196(a)(1)]. No more than 25 months may elapse between tune-up events [§63.11223(a)].
- One time energy assessment [§63.11201(b)] is required to be completed before March 21, 2014 [§63.11196(a)(3)]
- Minimize startup and shutdown length according to manufacturer's specifications [§63.11223(c)]

Operating Limits

- There are none because there are no applicable emission limits.

Performance Testing Requirements

- There are none because there are no emission limits.

Fuel Analysis

- There none because the unit is not subject to a mercury emission limit.

Recordkeeping and Reporting

- Standard NESHAP applicability notifications §63.11225 within 120 days after the source becomes subject to the standard (May 20, 2011) [§63.11225(b)]
- Completion of the energy assessment required pursuant to §63.11196 [§63.11125(a)(4)]

40 CFR 63.6580 Subpart ZZZZ

National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines This regulation establishes emission and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAPs. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission and operating limitations.

Because they were constructed prior June 12, 2006 and are located at an area source of HAPs, Devices S-2 and S-3 are classified as existing stationary RICE [§63.6590(a)(1)(iii)]. Both Devices are further classified as compression ignition engines whose operation is limited to emergency situations and required maintenance and testing at a facility which does not meet the definition of a residential, commercial, or

institutional facility. The engines are also not fired on landfill or digester gas. As such, the Devices are subject to the following requirements of Subpart ZZZZ.

Standards

- Oil change interval, inspect air cleaner, hoses and belts §63.6603(a) – Table 2d.4;
- Date compliance with emission and operating limitations required, May 3, 2013. [§63.6595(a)(1)];
- Must operate equipment safely and use good air pollution control practices [§63.6605(a)-(b)];
- Shall prepare an operation & maintenance plan. Shall not allow unit to idle more than 30 minutes. [§63.6625(e), (h), and (i)]; and
- Shall report deviations and violations of emission limits [§63.6640(b)].

Monitoring and Testing

- Shall install and maintain an engine hour meter. If alternative oil change interval method used, shall perform required testing. [§63.6625(f) and (i)].

Recordkeeping

- If alternate oil change interval used, shall maintain required records [§63.6625(i)];
- Records of repairs and maintenance required. [§63.6655(a), (a)(1)-(2), (a)(4)-(5), (d)-(f)]; and
- Record retention and content – 5 years, information, and legibility standards. [§63.6660(a)-(c)].

Reporting

- Semi-annual compliance certification required. [§63.6650(f)].

Designation for Emergency Use

- In order for Devices S-2 and S-3 to qualify for designation as emergency use only, they must not be operated for more than 100 hours per year for ready checks, maintenance, and testing purposes. The units may also be used for 50 hours per year for non-emergency purposes; all non-emergency usage counts toward the 100 hours allowed for ready checks, maintenance, and testing. Hours for emergency use are not limited. [§63.6640(f)].

CAM

The Compliance Assurance Monitoring (CAM) rule applies to sources that operate emission units with pre-controlled potential emissions at or above the major source thresholds that rely on control devices to comply with applicable requirements. The CAM rule requires facility operators to monitor the operation of air pollution control equipment, to properly maintain the equipment, to take corrective action to correct any malfunctions, and to report instances of equipment failure to the appropriate enforcement agency. BLP has the potential to emit (uncontrolled) greater than 100 tons per year of carbon monoxide, nitrogen oxides, and particulate matter. Device S-1 is subject to 40 CFR 60 Subpart Db which contains limits for nitrogen oxides and

particulate matter. The facility achieves compliance with the limits through the use of air pollution control equipment. As such, review to determine compliance with the CAM rule is appropriate.

NO_x

The Facility utilizes Continuous Emission Monitors (CEMs) for nitrogen oxides. Continuous operation, calibration, maintenance, and record keeping and reporting requirements for the CEMs are specified in the Part 70 permit for the facility. Because the permit specifies that the CEMs will be used to demonstrate continuous compliance with the emission limit, the emissions of NO_x are exempt from the requirements of 40 CFR Part 64 [64.2(b)(iv)].

Particulate Matter

The Facility utilizes Multi-Clones (MC) and an Electrostatic Precipitator (ESP) connected in series to control the emissions of particulate matter to within the regulatory limits of .04lbs per MMBtu of heat input supplied to the boiler. The boiler stack is equipped with a continuous opacity monitor, however, the COMs doesn't have the capability of directly measuring mass emissions, and so doesn't qualify as a CEMs.

The proposed permit contains conditions requiring the Facility to monitor indicators of performance for the control devices and associated storage and transportation systems. Further, the permit contains the following operation, calibration, maintenance, and record keeping and reporting requirements for the MCs and ESP.

1. The Permittee shall only fire the Device S-1 (Boiler) while all of the exhaust is routed through mechanical Multiclones identified in the Authorized Equipment Section of this permit. The Multiclones shall be operated and maintained in accordance with the Permittee's Device Operational Plan, and Device Maintenance and Replacement Plan.
2. The Permittee shall operate the Electrostatic Precipitator (ESP) in accordance with this Section at all times when the excess O₂ level is below 8%, and any amount of wood waste is being combusted in the Device S-1 (Boiler).
3. The Permittee shall continuously maintain the Electrostatic Precipitator (ESP) in accordance with manufacturer's recommendations, Device Operational and Maintenance Plans, and the requirements of this section which shall include but not be limited to the following:
 - a. Inspection of each ESP rapper at least once per day. The inspection shall consist of a visual inspection of the rapper control settings and status lights. Individual rappers found to be out of service shall be identified and appropriate repairs performed on the rappers.
 - i. Permittee shall repair rappers that fail due to temporary short circuit or circuit overload that blow a fuse within 2 working days of identification;
 - ii. Permittee shall repair working rappers that fail due to an

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- electric/electronic part within 30 days of identification; and
- iii. These repair dates may be adjusted upon approval of the APCO.
- b. Inspection of the ESP on a daily basis, according to the Device Operational and Maintenance Plans required to be developed by this Permit. The Inspection shall include, but not be limited to, a daily inspection and recording of each cell voltage, amperage and spark rate.
- c. Maintain the primary and secondary current of each Transformer Rectifier (TR) set within a range, in amps, as determined from operational data obtained or as stated in the Device Operational Plan. An alarm shall be set in such a manner as to indicate current excursions from the established range.
- d. Maintain the primary and secondary voltage of each Transformer Rectifier (TR) set within a range, in volts, as determined from operational data obtained or as stated in the Device Operational Plan. An alarm shall be set in such a manner as to indicate voltage excursions from the established range.
- e. Maintain the spark rate in each ESP field within a range in sparks/minute as stated in the Device Operational Plan. An alarm shall be set in such a manner as to indicate spark rate excursions from the established range.
- f. The ESP shall be maintained leak-free.
4. The Permittee shall inspect the ESP Rapper Control Panel to record the status, where appropriate action must be taken in the event a fault is observed in accordance with Permittee's Device Operational and Maintenance Plan.
5. There shall be no fugitive dust emissions from any transfer points of the boiler where wood waste ash is collected. All waste material collected from the ESP shall be kept in an enclosed container.
6. The Permittee shall operate the ESP automatic rapping system to maximize collection efficiency and minimize particulate re-entrainment, according to the manufacturer's specifications and as identified in the Device Operational and Maintenance Plan.
7. The Permittee shall maintain all ESP electric fields and corona power levels to maximize collection efficiency and minimize particulate re-entrainment, according to the manufacturer's specifications and as identified in the Device Operational and Maintenance Plan.
8. The Permittee shall maintain all ducting, housings, fans, chambers, and exhaust ducts in a leak free state during all times of operation. Emissions of exhaust gases visible to the unaided human eye shall not occur at any point upstream of the final exhaust stack discharge point.

9. The Permittee shall implement and maintain a written *Startup, Shutdown, and Malfunction Plan* as described in as described in 40 CFR 63.6(e)(3) which contains specific procedures for maintaining the authorized equipment, associated control devices, associated CEMS, sensors, measuring devices, during periods of startup, shutdown, and malfunction. The plan must clearly describe the startup and shutdown sequence procedure for each unit. The Plan shall also include a specific program of corrective actions to be implemented in the event of a malfunction in either the process or control systems. The Plan shall be submitted to the APCO within thirty (30) days from the date this permit is issued. Modifications to the Plan are subject to APCO approval and the Permittee shall not operate the authorized equipment and their associated control devices unless an APCO approved Startup, Shutdown, and Malfunction Plan is in effect.
10. The Permittee shall develop, implement and maintain a written *Device Operational Plan* that contains specific procedures for operating the authorized equipment, associated control devices, associated CEMS, sensors, and measuring devices. This plan shall be consistent with the requirements of this Permit, and all local, state and federal laws, rules, and regulations. The plan shall include, but not be limited to, daily system integrity inspections and the recording of operational parameters. The Plan shall be submitted to the APCO within thirty (30) days from the date this permit is issued. Modifications to the Plan are subject to APCO approval and the Permittee shall not operate the authorized equipment and their associated control devices unless an APCO approved Device Operational Plan is in effect.
11. The Permittee shall develop, implement and maintain a written *Device Maintenance & Replacement Plan* that contains specific procedures for equipment maintenance and identifies replacement intervals for components of the authorized equipment, associated control devices, associated CEMS, sensors, and measuring devices. The Plan shall be submitted to the APCO within thirty (30) days from the date this permit is issued. The Plan is subject to APCO approval. Modifications to the Plan are subject to APCO approval and the Permittee shall not operate the authorized equipment and their associated control devices unless an APCO approved Device Maintenance & Replacement Plan is in effect.

Because the permit specifies above requirements to demonstrate continuous compliance with the emission limit, the emissions of particulate matter are exempt from the requirements of 40 CFR Part 64 [64.2(b)(iv)].

Greenhouse Gas

This rule requires the estimation and reporting of greenhouse gas emissions. In order to comply with this regulation, the Facility must accurately measure fuel consumption and steam production, and must maintain records of the measurements. Should the actual greenhouse gas emission exceed 25,000 metric tons CO₂e in a given calendar year, the Facility will be subject to additional reporting and verification requirements.

California Health & Safety Code

HSC Section 42301.6

This section requires that public notice be given prior to approval of an application for a permit if the source emits air toxics and is located within 1000 feet of a K-12 school. The closest qualifying educational institution is the Blue Lake Union Elementary School. The Distance from the main boiler stack to the property boundary of the school is approximately 2,600 feet [Appendix 1 - Facility Location & Proximity Maps]. Therefore, the requirements of California Health and Safety Code §42301.6 do not apply.

Airborne Toxic Control Measures

The State of California has enacted a number of regulations aimed at reducing specific toxic air pollutants. These regulations, or Airborne Toxic Control Measures (ATCM), are found in the Title 17 of the California Code of Regulations. Although many of these regulations achieve reductions in criteria pollutants, they are not generally incorporated into the State Implementation Plan (SIP)⁸. Permit conditions are therefore included in the *local enforceable only* section. After review of the proposed equipment, it was determined that the following ATCMs are applicable.

17 CCR 93115

The ATCM for Stationary Internal Combustion Engines specifies performance criteria for devices based upon their intended purpose and size. Because devices S-2 and S-3 are stationary emergency standby engines rated at greater than fifty (50) brake horsepower per hour, they are subject to the following provisions. This ATCM is SIP approved and therefore federally enforceable

- Section (e)(2)(A)(3)(Table 1)
- Section (e)(1)(A) – Fuel requirements
- Section (e)(4) – Imposes recordkeeping, reporting, and monitoring requirements with (D) Demonstration of Compliance with Emission Limits, and (G) Monitoring Equipment, and (I) Reporting Requirements for Emergency Standby Engines

Establishment of a limit via District policy is authorized by the ATCM [Table 3, footnote 2]. It is District policy to use the appropriate EPA approved AP-42 emission factor as the limit. This issue is discussed further in proposed conditions section of this evaluation.

The ATCM specifies three categories of operation: emergency use, compliance testing, and maintenance and testing. Hours of operation for emergency use and hours of operation for compliance testing purposes are not limited. The permit will be conditioned to limit hours of operation to 20 hours of maintenance and testing use per year.

Emergency Use	Non-Emergency Use	
	Emission Testing to show compliance	Maintenance & Testing
Not Limited by the ATCM	Not Limited by the ATCM	20 hours/year

⁸ Email Communication with Ava Yahooobirad, CARB, 12-28-2012

California Greenhouse Gas Mandatory Reporting Rule

This rule requires the estimation and reporting of greenhouse gas emissions. In order to comply with this regulation the Facility must accurately measure fuel consumption and steam production, must maintain records of the measurements, and must report emission estimates annually. To satisfy the California requirements, the Facility need only to comply with the federal 40 CFR Part 98 greenhouse gas reporting requirements.

District Rules

Fees for Devices S-1, S-2, and S-3

- Rule 400.8 Schedule 1B §8.2, Permit Renewal
- Rule 400.8 Schedule 1B §8.2, Air Toxics
- Rule 406.1 Clean Air Act
- Rule 400.8 §8.1.3.1 Supplemental Air Monitoring
- Rule 400.17 Sources of Greenhouse Gases

HISTORY

Construction

BLP received a Prevention of Significant Deterioration preconstruction permit and a District Authority To Construct Permit to erect the dual fuel boiler unit in 1984. A mechanical multi-clone and electrostatic precipitator was determined to be Best Available Control Technology (BACT) for particulate matter, and combustion controls were determined to constitute BACT for carbon monoxide and oxides of nitrogen. Construction of the Facility was completed in mid 1986 and initial performance testing conducted in December of 1986.

The boiler manufacturer guaranteed emission rates for CO and NOx assuming a consistent mixture of wood chips with a moisture content between 30% and 50%. The Facility operator has installed a fuel dryer which is capable of removing approximately 10% of the moisture content prior to introduction to the boiler, thus extending the range to 60%. In practice, while firing on fuel with less than 40% moisture content, compliance with the NOx limits becomes challenging. The limiting factor appears to be the capacity of the current forced air system as observed exhaust gas oxygen levels dip below 6% tripping the ESP safety.

Market conditions and problems with fuel suppliers forced BLP as well as the other biomass power plants in the District to acquire chips on the open market throughout the 80's and 90's. During this time, BLP operated the boiler using fuel mixtures outside of the parameters specified in the manufacturer's guarantee. Excursions of the permitted emission limits occurred. While operating under a variance in 1997, BLP performed a upgrades to its combustion controls to help reduce emissions of carbon monoxide and nitrogen oxides thereby improving compliance with emission limits. However, the construction project achieved only partial success. Due to continued issues with fuel quality, on June 2, 1999, BLP requested and the District Hearing Board granted, a one year variance from the 3 hour average carbon monoxide and nitrogen oxides emission

limits contained within their Permit To Operate. As partial mitigation, the Facility was required to install CEMs for carbon monoxide, nitrogen oxides, and oxygen.

In the fall of 1999, the Facility was temporarily shutdown. The remaining biomass power plants within the District applied for revisions to the CO and NO_x 3 hour average emission limits within their Title V Permits. The District granted and the EPA approved the switch from a 3 hour average limit for the pollutants to a seasonally adjusted 3 tiered approach based on a 24 hour average. An identical approach is proposed for the Facility as described further in the emissions calculation section of this evaluation. The tiered approach is proposed for NO_x only.

The Facility was restarted in 2010 after the District determined that the proposed equipment modifications did not meet the definition of “modification”, and therefore BLP did not obtain an Authority to Construct prior to making the following improvements:

1. Complete replacement of the super-heater tubes;
2. Replacement of three elements in the Economizer;
3. Replacement of 1300 Air Heater tubes;
4. Replacement of the I.D. fan rotor, cones, housing, and dampers;
5. Complete replacement of the ESP collecting plates;
6. Replacement of the ESP doors and hopper.

As part of the renewal application, BLP submitted applications for two existing internal combustion engines. The engines were installed at the facility prior to the facility temporary closure in 1999. The District began requiring permits for devices of this type in 2006. Thus, as preexisting sources, their inclusion in the permit will not result in the release of additional air pollutants and so for new source review purposes the net change in emissions is equal to zero. A separate local permitting action is not proposed at this time.

Compliance Status

The composition of the exhaust gases from wood fired boilers depend largely upon the characteristics of fuel being combusted. The significant seasonal variability in the quality and moisture content of the wood fuel burned at the Facility has historically resulted in episodes of non-compliant operation. During the late 1980's and early 1990's, the vegetation being burned was predominantly Douglas fir and redwood. During this time, tuning the boiler through adjustment of the air ratios was all that was necessary for compliant operation. More recently, the composition of wood waste has shifted to include a higher percentage of redwood bark at higher than previous moisture contents. Over the last 12 month period, fuel quality has significantly improved due in part to improved fuel storage management. Since that time, excursions of the emission standards have only occurred during equipment breakdown events.

In accordance with California Health & Safety Code Section 42331, a review of the Facility's current compliance status was performed. At the time of preparation of this statement of basis, there were no records of pending Notices of Violations, or unresolved compliance issues with any of the permitted units or any operations at the

Facility. A statement from the responsible official certifying compliance with air quality regulations for calendar year 2012 operations is on file at the District office.

EMISSION CALCULATIONS

Air pollutants are grouped into two categories: criteria pollutants and hazardous air pollutants also referred to as toxic air contaminants. Calculations were performed to estimate the maximum quantity of pollutants which may be emitted by the Facility both on a short term (hourly) and long term (annual) basis. The potential to emit was calculated based on operation of the equipment at maximum design rate for 8,760 hours per year. Emission factors from several sources were reviewed including US EPA AP42, California Air Toxic Emission Factor Database (CATEF) and when available, source testing data from the Facility or a facility of similar design. The factor most representative of operations was selected. Reference information is included in *Appendix 4 – Emissions Calculations*.

Process Rate & Operating Schedule

Boiler S-1 is capable of combusting wood waste and propane gas; either individually or in combination. In order to ensure compliance with particulate emission standards, limits on the quantity of fuel allowed to be combusted in the device will be imposed for both fuel types. The allowable heat input is based upon the unit's maximum rated capacity fired for 8,760 hours per year.

Devices S-2 and S-3 are limited to 20 hours of operation per year while being fired on California Air Resources Board certified low sulfur diesel, currently limited to 15 ppm.

Wood Waste

The available heat input (energy) from wood waste fuel varies considerably between plant species and is significantly affected by the moisture content of the fuel at the time of burning. In a similar fashion, the quantity of pollutants emitted is also dependent upon fuel quality. In order to calculate the maximum potential to emit, the District first identified the worst case fuel conditions. According to information provided by BLP, the maximum fuel moisture content which can be fired in the boiler is approximately 60%. Allowable types of wood residue which may be burned at the Facility include hogged wood, bark, saw dust, shavings, chips, mill rejects, sander dust, and wood trim. Heating values for this residue range from about 4,500 British thermal units per pound of fuel on a wet, as fired basis to about 9,250 Btu/lb for dry wood, 8,500 is considered to be a representative average⁹.

The heating value or caloric value of a substance is the amount of heat released during the combustion of a specified amount of it. The Higher Heating Value (HHV) of a fuel is determined by fully oxidizing the fuel and then bringing all of the combustion products back to the original pre-combustion temperature, and in particular condensing any vapor produced. HHV is essentially the thermodynamic heat of combustion as the enthalpy change for the reaction assumes a common temperature of the reactants before and after reaction. Lower Heating Value (LHV) or net caloric value is determined by

⁹ AP 42, Volume 1: Stationary Point and Area Sources, Chapter 1 External Combustion Sources, Section 1.6.

subtracting the heat of vaporization of water from the HHV. Gross Heating Value (GHV) is used in applications where the heat of the vaporized water is reclaimed (i.e. through use of an economizer unit).

Emission factors in AP42 are to be adjusted according to the HHV of the wood waste being burned. For purposes of calculating potential to emit, the HHV of wood was determined to be 8,500Btu / lb. Assuming worst case fuel conditions, the LHV for wood was determined to be 4,500 Btu/lb of wood. The hourly, monthly and annual maximum allowable tonnage was derived based upon LHV or “as fired” value.

Compliance with the NOx and CO limits is demonstrated via CEMs. Short term (hourly) and long term (annual) PM limits are complied with via fuel burning and steam production limitations

$$\text{Heat Input Capacity of Boiler MMBtu per hour} \div \text{Fuel MMBtu per lb as fired} = \text{Lbs of fuel per hour}$$

$$\text{Lbs of Fuel Required per hour} \times 8,760 \text{ hours per year} = \text{Lbs fuel per year}$$

$$\text{Lbs per year} \div 2,000 = \text{tons of fuel per year}$$

The maximum allowable tonnage is 10.9 tons per hour and 95,329 tons per year.

$$(\text{Steam Capacity pounds per hour} \times 8,760 \text{ hours per year}) \div 12 \text{ months per year} = \text{allowable monthly average}$$

A maximum limit of 105,000 pounds of steam per hour and 919.8 million pounds of steam per year will also be included as permit conditions.

Propane Gas

The annual capacity factor for propane gas cannot exceed 10% for a calendar year based upon 40 CFR 60.44b (d). Assuming maximum firing of the boiler for 8,760 hours per year and assuming a 90,500 Btu content for a gallon of propane, 1,788,930 million gallons of propane is allowable per calendar year. No method was specified in the regulation for the calculation of allowable propane gas heat input for purpose of compliance with this section. Staff used the method listed in section§ 60.43b (e).

Criteria Pollutants

Device S-1, Boiler

The potential to emit for each criteria pollutant was determined utilizing the following equation: **Emission Factor * Production Rate** = $\frac{\text{lbs}}{\text{hr}}$ or $\frac{\text{tons}}{\text{yr}}$

Table 4.2 – Criteria Pollutants, Boiler lists the origin of the emission factor and the results when applied at maximum production rate for each device. Operation of Device S-1 when solely fired on wood waste will result in the highest emissions of criteria pollutants. Because the pollutant emission rates of propane gas are less than wood, when fired with any percentage of propane gas, the criteria pollutant emission rates are

always less than when fired 100% on wood waste. The calculations assume High Heat Value at 8,500 Btu content per pound of wood consistent with the EPA – 42 emission factors. It should be noted that the manufacturers design value for fuel burned in the unit is 8,350. The District is proposing to establish both short term and long term mass emission limits for all for the criteria pollutants. In the absence of a rule based limit, the District proposes to use AP-42 emission factors to determine the potential to emit. In such a case, the permitted limit will be equal to the device's potential to emit.

Carbon Monoxide

The potential to emit for CO was calculated utilizing the current permitted limit as shown below. In the absence of a regulatory limit, the permitted limit is equal to the AP-42 emission factor.

$$\frac{1.0 \text{ lbs CO}}{\text{MMBtu}} * \frac{185 \text{ MMBtu}}{\text{hour}} = 185 \text{ pounds per hour of CO}$$

The current permit conditions require compliance with CO limits to be determined as a three hour average. As such, the total quantity of CO which may be emitted over a period of 3 hours is 555 lbs. (3hrs * 185 lbs = 555 lbs). Since compliance is an average of 3 hours of operation, it is possible to exceed 185 lbs. in any one hour and still remain in compliance. The three hours of operation depicted below are an example of compliant operation. The scenario shown below also depicts the maximum amount of CO which may be emitted in any one hour.

Pollutant	Hour		
	1	2	3
CO	555	0	0

$$\frac{555 \text{ lbs of CO}}{3 \text{ hours}} = 185 \text{ pounds CO per hour average}$$

and

$$\frac{555 \text{ lbs of CO}}{3 \text{ hrs} * 185 \text{ MMBtu per hour}} = 1.0 \text{ pounds CO per MMBtu average}$$

The District performed a pollutant dispersion analysis for the emissions of CO utilizing EPA approved methodology and software (SCREEN3). At the proposed limit of 555.0 lbs per hour, the maximum modeled impact from the facility emissions is 442.5 ug/m³. Facility emissions are then combined with observed background levels in order to determine the total impact as shown below.

$$\frac{442.5 \text{ ug/m}^3 \text{ CO}}{1} * \frac{.000873 \text{ ppm CO}}{\text{ug/m}^3} = 0.386303 \text{ ppm CO (facility contribution)}$$

$$\mathbf{0.386303\ ppm\ CO\ (facility\ contribution) + 2.0\ ppm\ (background)} \\ \mathbf{= 2.39\ ppm\ total\ impact}$$

The California Ambient Air Quality Standard (AAQS) for CO, 20 ppm, is the most stringent hourly standard, thus, a violation an ambient air quality standard is not predicted to occur [Appendix 4, Figure 4.1].

The “tons per year” allowable was calculated as the sum of emissions possible while operating at the maximum allowable hourly emission rate [Appendix 4, Table 4.1].

$$\frac{1.0\ lbs\ NOx}{MMBtu} * \frac{185\ MMBtu}{Hour} * \frac{8,760\ hours}{year} * \frac{ton}{2,000\ lbs} = \mathbf{810.3\ tons\ per\ year\ of\ CO}$$

Nitrogen Oxides

The maximum allowable pound per hour rate for NOx was first calculated assuming EPA AP-42 values for the combustion of dry wood waste as follows:

$$\frac{0.49\ lbs\ NOx}{MMBtu} * \frac{185\ MMBtu}{hour} = \mathbf{90.65\ pounds\ NOx\ per\ hour}$$

The permit currently limits NOx to 0.15 lbs NOx / MMBtu on a 3 hour average which results in a maximum hourly value of 27.75 pounds per hour. However, as is the case for CO, the maximum emitted in any one hour which would still demonstrate compliance with the current permit is 3 times the hourly value or 83.25 lbs. Because the existing maximum allowable is less than the AP-42 calculated value, the maximum hourly potential to emit under the current permit is 83.25 pounds per hour.

$$\frac{27.75\ lbs.\ NOx}{hour} * 3\ hours = \mathbf{83.25\ pounds\ of\ NOx}$$

The District preformed a pollutant dispersion analysis for the emissions of NOx utilizing EPA approved methodology and software (SCREEN3). At the proposed limit of 83.25 lbs per hour, the maximum modeled impact from the facility emissions is 66.37ug/m3. Facility emissions are then combined with observed background levels in order to determine the total impact as shown below.

$$\frac{66.37\ ug/m3\ NOx}{1} * \frac{0.003532\ ppm}{ug/m3} = \mathbf{0.035309\ ppm\ NOx\ (facility\ contribution)}$$

Assume NO to NO2 ratio is 0.9.

$$\mathbf{0.9\ NO2\ ratio * 0.035309\ ppm\ NOx = 0.031778\ ppm\ NO2\ (facility\ contribution)}$$

$$0.032 \text{ ppm NO}_2 \text{ (facility contribution)} + 0.023 \text{ ppm (background)} \\ = 0.055 \text{ total impact}$$

The federal National Ambient Air Quality Standard (NAAQS) for NO₂, 0.100 ppm is the most stringent hourly standard, thus, a violation an ambient air quality standard is not predicted to occur [Appendix 4, Figure 4.2].

The “tons per year” allowable was calculated as the sum of emissions possible while operating at the maximum allowable hourly emission rate [Appendix 4, Table 4.1].

$$\frac{0.15 \text{ lbs NO}_x}{\text{MMBtu}} * \frac{185 \text{ MMBtu}}{\text{Hour}} * \frac{8,760 \text{ hours}}{\text{year}} * \frac{\text{ton}}{2,000 \text{ lbs}} \\ = 121.55 \text{ tons per year of NO}_x$$

BLP has requested and the District is proposing to approve a change in the averaging time used to demonstrate compliance with the BACT standard of 0.15 lbs of NO_x / MMBtu. With the addition of an hourly mass emission rate, the proposed change to a rolling 24 hour average will not result in any increases in allowable emissions.

$$\frac{666 \text{ lbs of NO}_x}{24 \text{ hours}} = 27.75 \text{ pounds per hour average}$$

and

$$\frac{666 \text{ lbs of NO}_x}{24 \text{ hrs} * 185 \text{ MMBtu per hour}} = 0.15 \text{ pounds NO}_x \text{ per MMBtu average}$$

Particulate Matter

The maximum allowable pound per hour rate for PM_{2.5} and PM₁₀ was calculated using the NSPS standard for particulate [Appendix 4, Table 4.2]:

$$\frac{0.04 \text{ lbs PM}}{\text{MMBtu}} * \frac{185 \text{ MMBtu}}{\text{hour}} = 7.4 \text{ pounds PM per hour}$$

$$\frac{7.4 \text{ lbs PM}}{\text{hour}} * \frac{8,760 \text{ hours}}{\text{year}} = 32.41 \text{ tons PM per year}$$

Volatile Organic Compound

The maximum allowable pound per hour rate for VOC was calculated assuming EPA AP-42 values for the combustion of wood waste as follows [Appendix 4, Table 4.2]:

$$\frac{0.025 \text{ lbs VOC}}{\text{MMBtu}} * \frac{185 \text{ MMBtu}}{\text{hour}} = 4.62 \text{ pounds ROC per hour}$$

$$\frac{4.62 \text{ lbs VOC}}{\text{hour}} * \frac{8,760 \text{ hours}}{\text{year}} = 20.26 \text{ tons ROC per year}$$

Sulfur Oxides

The maximum allowable pound per hour rate for SOx was calculated assuming EPA AP-42 values for the combustion of wood waste as follows: [Appendix 4, Table 4.2]:

$$\frac{0.017 \text{ lbs SO}_2}{\text{MMBtu}} * \frac{185 \text{ MMBtu}}{\text{hour}} = 3.14 \text{ pounds SO}_x \text{ per hour}$$

$$\frac{3.14 \text{ lbs SO}_2}{\text{hour}} * \frac{8,760 \text{ hours}}{\text{year}} = 13.78 \text{ tons SO}_x \text{ per year}$$

Summary of Device S-1 (Boiler) Emission Limitations

Pollutant	Emission Rate	
	Pounds/Hour	Tons/Year
CO	555	809.7
NOx	83.25	120.6
PM2.5	7.4	32.4
PM10	7.4	32.4
VOC	4.6	20.3
SOx	3.1	13.8

Device S-2 and S-3, Emergency Generator and Feed-water Pump

The potential to emit for each device was determined utilizing the following equation:

$$\text{Emission Factor} * \text{Hours of Operation} = \frac{\text{lbs}}{\text{hr}} \text{ or } \frac{\text{tons}}{\text{yr}}$$

Devices S-2 and S-3 have the potential to emit amounts of criteria pollutants listed as in the table below [Appendix 4, Tables 4.6 and 4.7]. The basis for the emission limits is discussed further in the proposed condition section of this evaluation.

HAPs

Device S-1, Boiler

The potential to emit for each hazardous air pollutant was determined utilizing the following equation:

$$\text{Emission Factor} * \text{Production Rate} = \frac{\text{lbs}}{\text{hr}} \text{ or } \frac{\text{tons}}{\text{yr}}$$

Table 4.3 lists the origin of the emission factor and the results when applied at maximum production rate for each device. After controls are applied, Device S-1 has the potential to emit 3.24 tons per year of acrolein, 3.11 tons of hydrochloric acid, and 15.3 tons of all HAPs combined. The calculations assume High Heat Value at 8,500 Btu content per pound of wood.

Device S-2 and S-3, Emergency Generator and Feed-water Pump

The potential to emit for each device was determined utilizing the following equation:

$$\text{Emission Factor} * \text{Hours of Operation} = \frac{\text{lbs}}{\text{hr}} \text{ or } \frac{\text{tons}}{\text{yr}}$$

The calculation of diesel particulate matter is identical to that of the criteria pollutant section. Thus, Devices S-2 and S-3 have the potential to emit the 0.275 lbs per hour and 0.737 lbs per hour respectively. Calculations are listed in [Appendix 4, Tables 4.6 and 4.7].

AB 2588 TOXIC HOTSPOTS ACT

The Air Toxics Hot Spots Information and Assessment Act of 1987 (AB2588) created a program by which the California Air Resources Board and local Districts were to collect toxic emission data from facilities and then to calculate the relative health risk created as a result of the public's exposure to those pollutants. The risk is quantified through a process called a health risk assessment that generates a numerical value which can be used to express the health impacts as a result of exposure to pollutants. Emissions are scored in two categories: cancer and non-cancer effects. Once the estimated risk for a Facility or activity is known, District staff determines if the value exceeds levels of significance. There are two significance levels, the first triggers public notification, and the second risk reduction.

Prioritization

The California Air Resources Board has developed an emission inventory reporting program which is also widely used as a tool to estimate health risk. Staff prepared prioritization score using the state approved HARP software. Based upon calendar year 2011 emissions, the resulting score was assessment score was 4.97 placing the Facility in the low risk category. The results of the prioritization are listed in Appendix 2 – Prioritization Score.

Health Risk Assessment

Based upon the prioritization procedure performed using HARP, the District has determined that no additional analysis is warranted at this time. The Facility will be required by the permit to operate to report emission inventory data annually. The District will process the inventory data and determine if further evaluation is necessary.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Legislature enacted the California Environmental Quality Act (CEQA) in 1970 as a means to require public agency decision makers to document and consider the environmental implications of their actions. CEQA compels agencies to identify the environmental effects of potential projects (actions), to determine whether they are significant, and then require the effects to be mitigated either through the imposition of feasible measures or through the selection of alternatives. There are several types of environmental review documents, each of varying complexity, which may be prepared to record the agency's decision making process. CEQA affords the public the opportunity to comment on proposed projects and requires the agency to respond in writing.

The Air Pollution Control Officer has proposed to renew the Facility's Title V Permit to Operate. The proposed renewal will not include a modification which authorizes a physical or operational change to the Facility. Thus, the District has determined that the proposed renewal is statutorily exempt [Pub. Resources Code, §21080.24; CEQA Guidelines §15281].

PROPOSED CONDITIONS

After review of the proposed project, compliant operation of the proposed equipment is possible should the conditions discussed in this section and the conditions listed in *Appendix 6 – Proposed Conditions* be incorporated into the Permit To Operate.

Emission Limitations

Both short term and long term limits on the quantity of pollutants which can be emitted from the devices will be imposed as conditions in the Permit to Operate. Where multiple limits have been identified, only the most restrictive will be listed in the Permit, Pursuant to U.S. EPA White Paper Number 2.

Device S-1, Boiler

The wood waste boiler is subject to the following overlapping applicable requirements.

Applicable Requirement	Emission Limits		
	Opacity	PM	NOx
40 CFR Subpart Db NSPS for Industrial, Commercial, and Institutional Steam Generating Units	20 %	0.10 lb/MMBtu hourly average	0.30 lb/MMBtu hourly average

NCUAQMD Rule 410 Visible Emissions	40%	N/A	N/A
NCUAQMD Rule 420 Particulate Matter	N/A	0.10 lb/MMBtu hourly average	N/A
NCUAQMD Rule 440 Sulfur Oxide Emissions	N/A	N/A	N/A
<i>BACT requirements from NCUAQMD Rule 220 New Source Review Standards</i>	20%	<i>0.04 lb/MMBtu hourly average</i>	<i>0.16-0.23 lb/MMBtu 24 hour average</i>

The above applicable requirements will be streamlined and only the BACT related New Source Review requirements, which are the most stringent requirements, will be incorporated into the Title V permit.

The moisture content and quality of the fuel stored at the Facility is not uniform throughout the year. In order to allow flexibility to adjust for the varying fuel quality, a compliance approach utilizing tiered emission levels was developed for all three biomass facilities within the District. However, the approach was not incorporated into BLP's Title V permit because the facility was temporarily shutdown in 1999. The approach allows greater pollutant emission rates on a daily basis while maintaining PSD established monthly averages. Each of the tier limits are an average of the hourly readings computed by the CEMs for the hours the boiler was operated during a given calendar day. The tiers differ in the rate of NO_x which may be emitted, and in the number of days per month the Boiler may operate at that tier value. In no event are emission rates, calculated on a twenty four hour average, in excess of Tier 3 allowed. Tier 1 (Base limit) - needs to be attained for the highest percentage of time. The total 24 hourly averages per month of Tier 2 and Tier 3 may not exceed 8 times per month. The total 24 hourly averages per month cannot exceed 3 times per month for Tier 3.

Nitrogen Oxides Tier Emission Limits

Tier	Lb. NO_x /MMBTU 24 hour average	Allowable Frequency Calendar Month
1	0.13	NO _x emissions may not exceed the Tier 1 limit except as noted below for Tier 2 and Tier 3.
2	$0.13 \leq x < 0.17$	NO _x emissions shall not occur in the Tier 2 and Tier 3 ranges for more than (8) 24 hour averages each month.
3	$0.17 \leq x < 0.21$	NO _x emissions shall not occur in the Tier 3 range for more than (3) 24 hour averages each month.

In a letter of July 5, 2000, the U.S. EPA Region 9 concurred with the use of the District's tiered, seasonal approach to the emission limits as an appropriate response to the potential compliance issue for devices of similar design in the District [*Appendix 3 - Correspondence*].

Rather than seeking a tiered approach, BLP has requested a change in the averaging period used to determine compliance with BACT limit for NO_x. The requested change from 3 hours to a rolling 24 hour average will not result in additional emissions of NO_x. CEMs for carbon monoxide and nitrogen oxides will be used to determine compliance with the emission limits.

Device S-2 and S-3, Emergency Generator and Feed-water Pump

The APCO has elected to exercise the authority granted by District Rule 102 §5.0 to impose mass emission limits on for all of the regulated pollutants emitted by a device in amounts greater than de minimis quantities. In the case of stationary diesel powered internal combustion engines, establishment of a limit via District policy is authorized by the State ATCM [CCR §93115 Table 3, footnote 2]. It is District policy to use the appropriate EPA approved AP-42 emission factor as the limit. Device S-2 and S-3 will be limited to 1.0 g/bhp-hr of particulate matter. The hourly and annual allowable emissions of criteria pollutants for the devices are equivalent to their potential to emit while operating at maximum capacity for twenty hours [Appendix 4, Tables 4.6 and 4.7].

Device S-2 (Emergency Generator) Emission Limits

Pollutant	Emission Rate	
	lb/hr	tons/year
PM	0.737	0.00737
NO _x	1.39	0.139
CO	2.38	0.0238
TOC	0.827	0.00827
SO _x	0.0018	0.000018

Device S-3 (Boiler Feed-water Pump) Emission Limits

Pollutant	Emission Rate	
	lb/hr	tons/year
PM	0.375	0.00375
NO _x	3.875	0.03875
CO	0.835	0.00835
HC	3.09	0.0309
SO _x	0.0007	0.000007

Operation Requirements and Production Limits

As part of the renewal application, the permittee provided a description of operations which occur at the Facility. The manufacturer's product description also supplied with the application suggests that the equipment currently in use is appropriate for the intended purpose if operated at or below rated capacities, according to specific operating practices, and if appropriate maintenance is performed. The permit conditions listed in this section are intended to ensure operation consistent with the information, plans, and analyses submitted in the application. Where third party guidance is unavailable, the permittee will be required to develop operational and maintenance plans subject to District approval.

Fuel Type & Production Limits

The potential to emit calculations assumed that the firing of the boiler would involve the combustion of wood waste and propane gas. Both fuel types will be defined in the permit as well as a prohibition for combusting other materials. Wood Waste shall be defined as "Combustible wood waste from timber, sawmill residues, forest residues, chips, and vegetation, which is not treated with any chemicals or lead based paints". Propane Gas shall be defined as "a mixture of gaseous hydrocarbons as defined by Standard Method ASTM D1835". For this Facility, an annual capacity factor of 10% for propane gas equates to a limitation of about 1.78 million gallons of propane per calendar year (assuming 1 gallon of propane = 90,500 Btu's)

$$\frac{185 \text{ MMBtu}}{\text{hr}} * \frac{8,760 \text{ hr}}{\text{yr}} * \frac{1 \text{ gallon propane}}{90,500 \text{ Btu}} * 10\% \text{ annual capacity factor} = \frac{1.78 \text{ million gallons propane}}{\text{year}}$$

The potential to emit calculations were based on the combustion of 10.9 tons per hour and 95,329.41 tons per year of wood waste fuel; and the production of 105,000 pounds of steam per hour, and 919,800,000 million pounds per year. The permit will be conditioned with these production limitations.

Control Equipment

In order to minimize particulate matter emissions to the maximum extent possible, the ESP should be in operation whenever wood waste is fired in the boiler. However, it is recognized that boiler exhaust gas composition may prevent operation of the ESP during periods of startup, shutdown, and malfunction. Oxidation of unburned fuel in the ESP during such periods is possible and may result in catastrophic damage. Accordingly, the permit will be conditioned such that the ESP shall be in operation when the excess O₂ is below 8% and any wood waste is fired in the boiler.

Operational Plans

In order to minimize emissions to the maximum extent feasible, the BLP shall be required to develop, implement, and maintain a series of documents or plans which describe methods, procedures, and actions necessary when operating the equipment authorized by the permit. The plans are broken into three categories: Startup, Shutdown, and Malfunction Plan (SSM Plan), Device Maintenance & Replacement Plan, and a Device Operational Plan. These Plans are to be submitted to the District

within ninety (90) days once the permit is issued. Future modifications to the Plans are subject to APCO approval and the owner / operator shall not operate the authorized equipment unless the Plans are in effect.

New Source Performance Standard Subpart A requires that the emitting equipment and the pollution control equipment be operated "in a manner consistent with good air pollution control practice for minimizing emissions" [40 CFR 60.11(d)]. These plans are meant to establish a baseline of "good practices" which can be used as a basis for evaluating an equipment breakdown event.

The SSM Plan must clearly describe the startup and shutdown sequence procedure for each unit. The Plan shall also include a specific program of corrective actions to be implemented in the event of a malfunction in either the process or control systems. The applicant will also be required to develop, implement, and maintain a written *Device Operational Plan* that contains specific procedures for operating the authorized equipment, associated control devices, associated CEMS, sensors, and measuring devices. The plan shall include, but not be limited to, daily system integrity inspections and the recording of operational parameters. In addition, the applicant will also be required to develop, implement, and maintain a written *Device Maintenance & Replacement Plan* that contains specific procedures for equipment maintenance and identifies replacement intervals for components of the authorized equipment, associated control devices, associated CEMS, sensors, and measuring devices.

In several locations within the permit, a Plan is referenced such that equipment/operations are required to be operated or performed according to what the applicant has submitted, for example:

- The boiler multi-clone shall be operated and maintained according to the BLP's Device Operational Plan and Device Maintenance and Replacement Plan.
- The Permittee shall continuously maintain the ESP in accordance with manufacturer's recommendations and Device Operational and Maintenance Plans.
- The primary and secondary current and voltage of each Transformer Rectifier set shall be maintained within a range as stated in a Device Operational Plan.
- After inspection of the ESP Rapper Control panel, appropriate action must be taken (in the event a fault is observed) in accordance with the BLP's Device Operational and Maintenance Plan.

Monitoring & Performance Testing

The permit conditions listed in this section are designed to ensure proper verification of Device(s) compliance status can be made. The conditions will identify the method to be used, the testing procedure to be followed, and the frequency at which the sampling or testing shall be performed.

COMs & CEMs

The Facility is required to meet an opacity standard under §60.43b and so must calibrate, maintain, and operate a continuous opacity monitoring system (COMS) for measuring opacity [§60.48b and Rule 103 §12.0]. The unit shall be in operation at all times that fuel is being combusted in the boiler. Calibration checks are to be performed in accordance with 40 CFR 60.13.

The proposed permit requires that compliance with the seasonal tiered emission limits for Nitrogen Oxide be determined on a continuous basis via CEMS. In order to verify compliance, the CEMS must undergo annual Relative Accuracy Test Audits (RATA) for CO and NO_x. The CEMs shall be operated in accordance with 40 CFR 60, Appendix B, Performance Specifications and Appendix F, Quality Assurance Procedures. In the RATA, gaseous emission (O₂, CO, NO_x) stack tests (Reference EPA Methods 7E, 10, 3A) are performed at normal full-load conditions (i.e. greater than 90% capacity) to determine the relative accuracy of the CEMS.

Relative Accuracy Determination

The relative accuracy of the O₂ analyzer is determined in accordance with 40 CFR 60, Appendix B, Performance Specification 3. The RATA results are acceptable if the mean difference of the plant monitor's measurements and the corresponding Reference Method measurements are within +/- 1.0% O₂.

Since the CO and NO_x analyzers incorporate equipment for determination and reporting of pollutant mass emission rates, the systems are technically defined as continuous emission rate monitoring systems (CERMS). In accordance with 40 CFR 60, Appendix B, Specification 6, relative accuracy test results for mass emissions are acceptable if the relative accuracy does not exceed 20% of the mean value of the RM test data in terms of the units of the emission standard, or 10% of the applicable standard whichever is greater.

In addition to the automated monitoring functions performed by the CEMs, the power plant's operational and emission control systems should be visually inspected yearly during scheduled shutdowns for routine maintenance, as well as during any unplanned shutdown events. Also, as described in the discussion of the plant's control equipment, voltages in the electrostatic precipitator (ESP) are manually recorded by plant operators, and the ESP's rappers are continuously monitored by visual observation of the ESP's control panel.

Source Testing

New Source Performance Standards for the boiler specify the pollutants and methods to be employed during initial performance testing. Annual verification is required by the District unless the observed values are less than 50% of permitted limits; in which case the APCO may elect to defer the testing requirement one year. All testing shall be performed in accordance with §60.8 and shall be conducted during conditions determined to most challenge the air pollution control devices. 40 CFR Subpart JJJJJJ Table 3 requires operators of boilers to limit the average operating load of a unit to no

more than 110% of the operating load recorded during the most recent source test. Since the permit authorizes operation of Device S-1 at 100% capacity, and the District has determined that operation at equal to or greater than 95% of the name plate rating of Device S-1 will likely result in the greatest quantity of pollutants emitted and therefore most challenge the emission control equipment, source testing shall be conducted at equal to or greater than 95% of the boiler's name plate rated capacity. Heat input capacity shall be verified according to dry basis emission factor method and Method 19.

Method 1 of Appendix A of Subpart A shall be used to select the sampling site and the number of traverse sampling points. The sampling volume shall be at least 120 minutes with a minimum sampling volume of 1.7 dscm. Smaller sampling times may be approved by the District.

Method 3A or 3B of Appendix A-2 of Subpart A shall be used for gas analysis when applying Method 5.

Method 5 shall be used to measure the concentration of PM. The temperature of the sample gas in the probe and filter holder shall be monitored and maintained at 160 +/- 14°C. An O₂ or CO₂ sample shall be obtained simultaneously with each run at the same sampling location as the PM sample is drawn. For each run, the emission rate shall expressing heat input shall be determined using the O₂ or CO₂ measurements and the PM measurements, the dry basis F factor, and the dry basis emission rate calculation procedure contained in Method 19.

Method 9 shall be used to determine opacity of the exhaust gases simultaneously with the Method 5 run.

The Facility shall demonstrate the maximum heat input capacity of the device and shall be determined on a 3 hour average basis [§60.44b(j)]. The maximum heat input capacity shall be determined using the heat loss method or the heat input method described in sections 5 and 7.3 of the ASME Power Test Codes 4.1 (see §60.17) as required by §60.46b(g).

Compliance with visible emission limitations will be assessed utilizing EPA Reference Method 9. Evaluations shall be performed concurrent with Method 5 testing and shall be performed at least annually.

Notification, Recordkeeping & Reporting

The Facility is required to demonstrate compliance through proper operation of equipment, collection of data via CEMs and COMs, and performing source testing. This operating information, sampling data, and test results shall be maintained at the Facility and be accessible to District staff upon request, and shall be reported to the District at the frequencies specified in the following tables.

Frequency	Information to be Recorded
At all times	A. Data on the operation of the Device S-1 (Boiler) which shall include the parameters of temperature, pressure, and steam produced.

	B. Records of opacity data from averages of samples collected every 15 seconds and then averaged over periods of 6 minute increments. [40 CFR 60.49(b)(f)]
Upon occurrence	C. Any Startup or Shutdown. D. Any periods of malfunction of the air pollution control equipment. E. Any periods during which the COMS or CEMS were inoperative
Hourly	F. Electrostatic Precipitator Transformer Rectifier (TR) set current. G. Electrostatic Precipitator Transformer Rectifier (TR) set voltage. H. Electrostatic Precipitator spark rate for each section. J. Hourly averages of carbon monoxide, nitrogen oxides and oxygen. K. The amount of steam produced by the Device S-1 (Boiler) each hour. L. Status of the ESP Rapper Control Panel.
Daily	M. The number of hours Device S-1 was operated. N. Daily 24 hour averages of carbon monoxide, nitrogen oxides and oxygen. O. The amount of natural gas combusted by Device S-1 in scf and Btu's. P. The amount of wood waste combusted in tons and Btu. Q. ESP Maintenance, inspections, and repairs log, including: <ul style="list-style-type: none"> i. Identification of the equipment ii. Date of inspection iii. Corrective action taken iv. Identification of the individual performing the inspection
Monthly	R. Emissions of carbon monoxide, nitrogen oxides, particulate matter, volatile organic compounds, and sulfur oxides in tons. R. The amount of steam produced by Device S-1 in pounds. T. The amount of natural gas combusted in Device S-1 in scf and Btu's. U. Quantity of Wood Waste Combusted in tons. U. Moisture content of Wood Waste Combusted as a percentage of weight.
Annually	V. Emissions of carbon monoxide, nitrogen oxides, particulate matter, volatile organic compounds, and sulfur oxides in tons. X. The amount of steam produced by Device S-1 in pounds. Y. The amount of natural gas combusted in Device S-1 in scf and Btu's. Z. Quantity of Wood Waste Combusted in tons. AA. Moisture content of Wood Waste Combusted as a percentage of weight.

Frequency	Information to be Reported
Upon occurrence	A. All occurrences of excess emissions in accordance with the timing requirements of District Rule 105 §5.0 Equipment Breakdown and Rule 502 §9.0 Emergency Events.
Monthly - by the 15th of the following month	B. Identify any deviation from permit requirements, including a summary of those deviations attributable to breakdowns reported in accordance with District Rule 105 §5.0. C. The daily 24 hour averages for carbon monoxide, nitrogen oxides and oxygen. D. The number of days operated in each seasonal tier range for carbon monoxide and nitrogen oxides. E. The hourly average steam production averaged over the calendar month. F. Amount of natural gas combusted by the Device S-1 for the year in scf and Btu's G. Calculation of the annual capacity factor for natural gas on a 12 month rolling average basis. [40 CFR 60.49(b)(d)] H. Quantity of Wood Waste Combusted in tons. I. Moisture content of Wood Waste Combusted as a percentage of weight.

Frequency	Information to be Reported
Yearly – by January 30th of the following year	J. Number of operating days for the Device S-1 for the year. K. Amount of steam produced by the Device S-1 for year in pounds. L. Amount of natural gas combusted by the Device S-1 for the year in scf and Btu's M. Amount of PM, CO, NOx, and emissions in tons. N. Quantity of Wood Waste Combusted in tons. O. Moisture content of Wood Waste Combusted as a percentage of weight. P. Activity of Insignificant Emission Units Listed in Table 12.0.

For Devices S-2 and S-3, Local Enforceable Only

Frequency	Information to be Recorded & Reported
Upon Occurrence	A. Time and duration for each engine startup B. Maintenance and testing hours of operation C. Emergency use hours of operation D. Hours of operation for any emission testing E. For each bulk delivery of diesel fuel received, certification from the supplier that the diesel fuel meets or exceeds CARB Diesel Fuel specifications
Annually	H. Number of Hours Operated for Maintenance & Testing Purposes I. Total Number of Hours Operated J. Total Number of Gallons Combusted

ADMINISTRATIVE NOTICING REQUIREMENTS

The Federal Clean Air Act requires the permitting authority (District) to transmit a copy of each permit application and supporting materials to US EPA Region 9, and to each affected State. District Rule 503 contains provisions defining the notification process and outlining the procedure for official notice of the proposed decision, contents of the notice, transmittal of notice to EPA, and how changes to a proposed decision are to be addressed. The proposed decision and draft permit will be sent to the responsible official, U.S. EPA Region 9, California Air Resource Board, Oregon Department of Environmental Quality and neighboring air quality management districts.

RECOMMENDATION

The continued operation of the boiler and associated equipment as described in this evaluation should comply with all local, State, and Federal emission requirements when operated in accordance with the permit conditions listed in the Permit to Operate. Further, staff has evaluated the information presented by the applicant and applicable rules and regulations, and believes sufficient evidence exists for the APCO to make the determinations required under Rule 102 §1.2 and Rule 103 §7.0. Thus, staff recommends that conditional approval, in accordance with Rule 103 §5.0, be granted to Blue Lake Power, LLC to operate the Blue Lake power plant in accordance with Permit to Operate NCU 097-12.

Date

Jason L. Davis, Division Manager

DRAFT

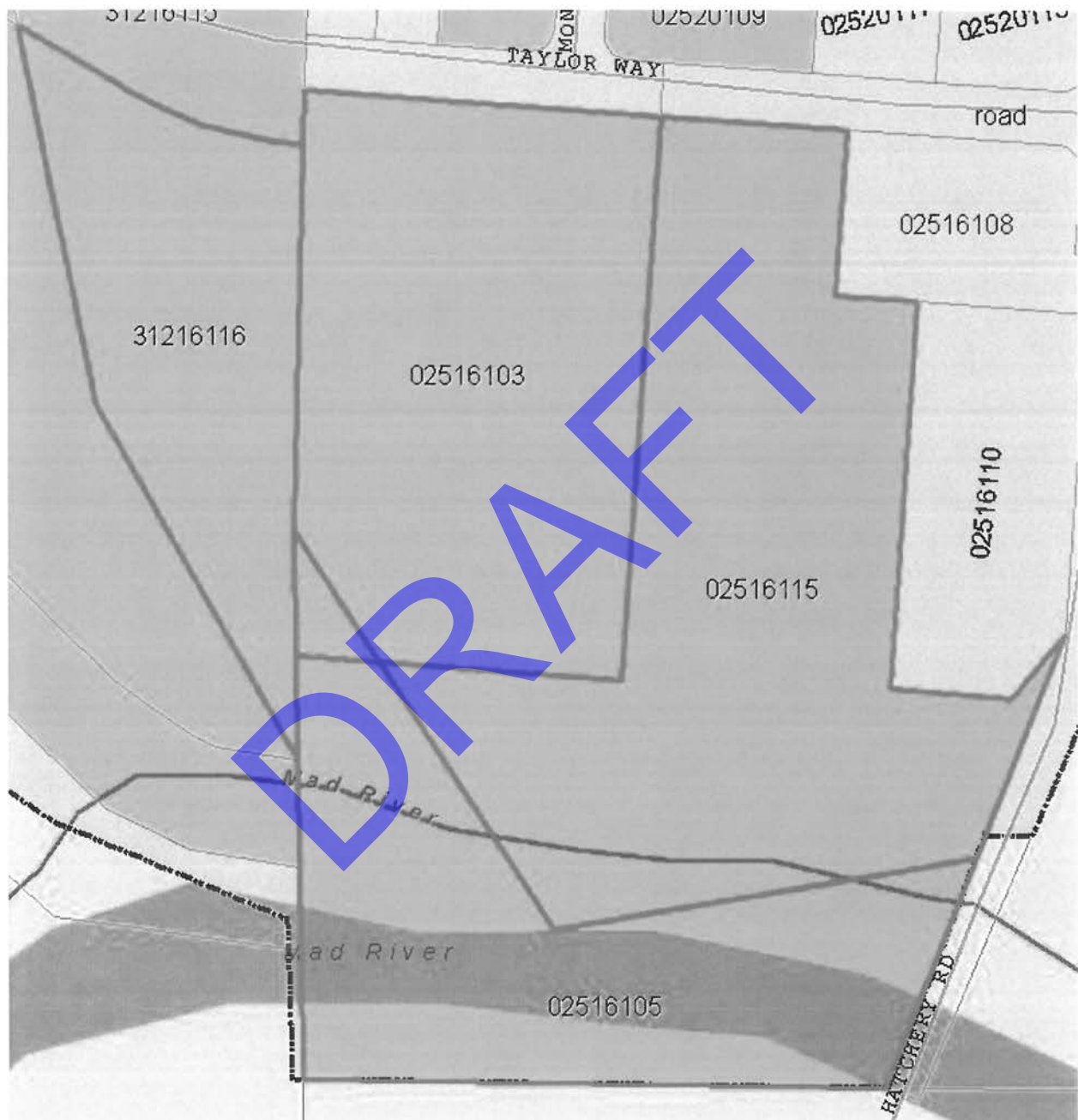
Facility Location & Proximity Maps

Figure 1.1 - Facility Location

Figure 1.2 – Distance to Nearest K-12 School

Figure 1.3 – Identification of APNs

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Assessor Parcel Number	2516103
GIS ACRES	6.3272
OWNER NAME	BLUE LAKE CITY OF
Use Code Description	Public Land, Non Taxable Entities
GIS Update Date	2007-07-26T00:00:00

Assessor Parcel Number	31216116
GIS ACRES	3.5633
OWNER NAME	BLUE LAKE CITY OF
Use Code Description	Public Land, Non Taxable Entities
GIS Update Date	2007-07-26T00:00:00

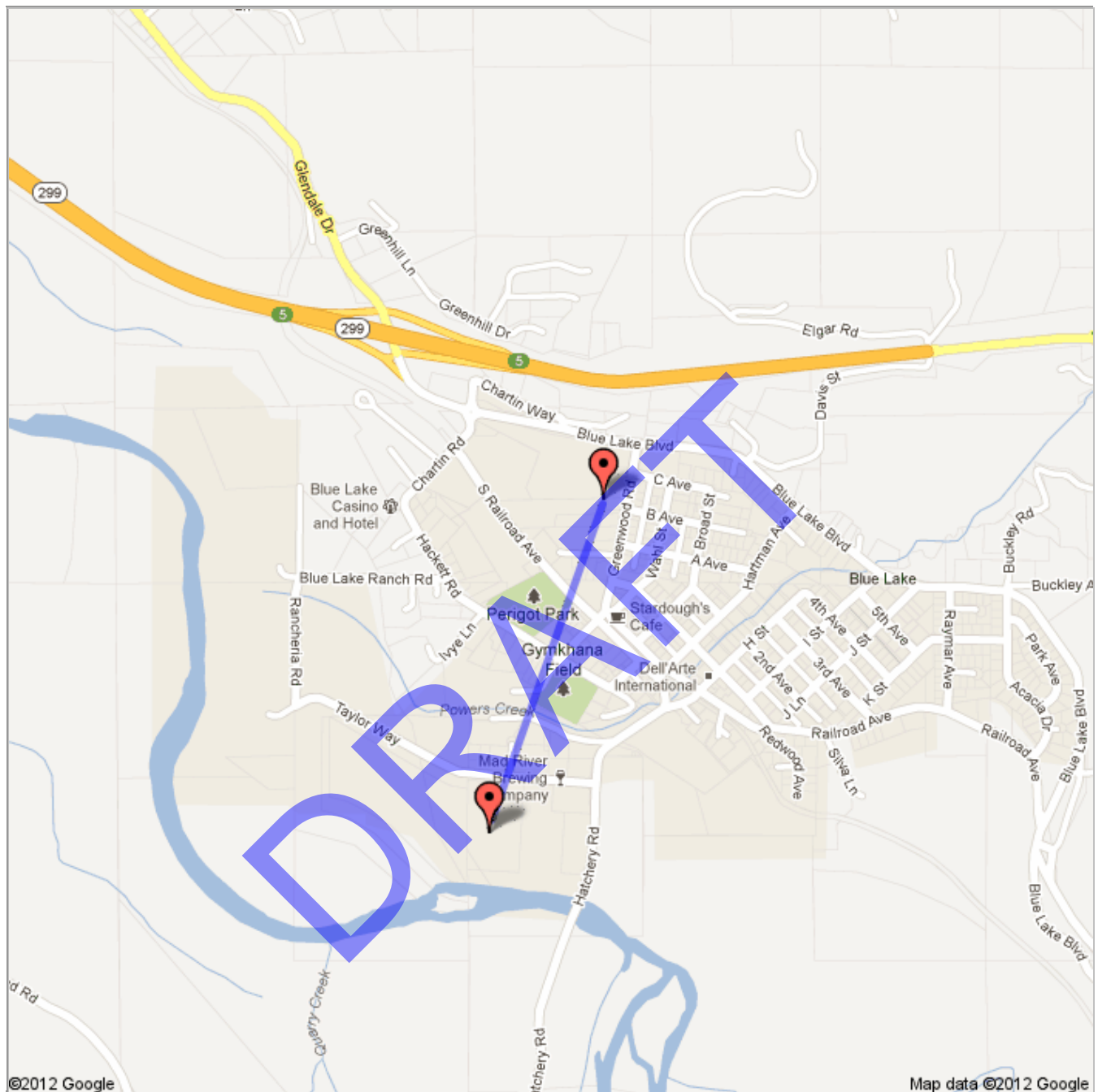
Assessor Parcel Number	2516115
GIS ACRES	8.4769
OWNER NAME	BLUE LAKE CITY OF
Use Code Description	Public Land, Non Taxable Entities
GIS Update Date	2007-07-26T00:00:00

Assessor Parcel Number	2516105
GIS ACRES	5.1428
OWNER NAME	BLUE LAKE CITY OF
Use Code Description	Public Land, Non Taxable Entities
GIS Update Date	2007-07-26T00:00:00

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Approximately 2,600 feet from the boiler stack to the property boundary of the school.



Blue Lake Power to Nearest School

Unlisted · 0 views

Created on Nov 27 · By · Updated < 1 minute ago



Boiler Stack



Blue Lake Union Elementary School



Distance to School

Prioritization Score

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Correspondence

District Hearing Board Order 99-2

Staff Report & Transmittal Letter to EPA for PSD Permit Revision

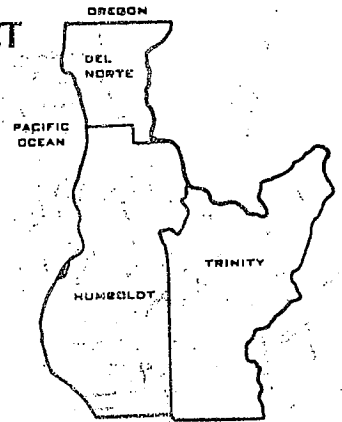
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SENT -
FILE COPY

NORTH COAST UNIFIED AIR QUALITY MANAGEMENT DISTRICT

2300 Myrtle Avenue, Eureka, CA 95501

Phone (707) 443-3093 Fax (707) 443-3099



July 18, 2000

Mr. Raymond Menebroker, Chief
Project Assessment Branch
Stationary Source Division, CARB
P.O. Box 2815
Sacramento, California 95812

Dear Mr. Menebroker:

Subject: NCUAQMD revised Permits to Operate/Title 5 Permits for
Fairhaven Power Company and The Pacific Lumber Company

Enclosed, you'll find revised Permits to Operate/Title V Permits for two facilities within the North Coast Unified Air Quality Management District, for your files. As mentioned in the transmittal to the permit holders, permit issuance was properly noticed to the public, the US EPA, and the Air Resources Board.

If you have any questions, or need additional information, please feel free to call me at (707) 443-3093.

Sincerely

Robert Torzynski

Robert Torzynski
Air Quality Planner/Specialist
North Coast Unified Air Quality Management District

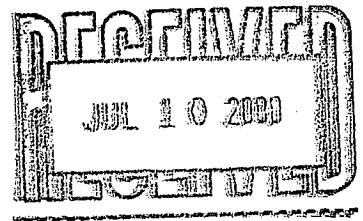
Attachments:

Copies of Permits to Operate and Transmittal Letters



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

July 5, 2000



Wayne Morgan
Air Pollution Control Officer
North Coast Unified AQMD
2300 Myrtle Avenue
Eureka, CA 95501

Dear Mr. Morgan:

Thank you for the opportunity to comment on the proposed title V and Prevention of Significant Deterioration (PSD) permit modifications for Pacific Lumber Co. and Fairhaven Power Co. which were received by EPA on May 31, 2000. In accordance with 40 CFR §70.8(c), and the North Coast Unified AQMD Rule 540(d), the EPA has reviewed the proposed modifications during our 45-day review period.

Based on the combination of fuel with a high moisture content and the recent availability of continuous emission monitoring data, we agree that there is sufficient justification for changing the emission limits for carbon monoxide (CO) and nitrogen oxides (NOx). We concur with the District's tiered, seasonal approach to the emission limits, which we believe is an appropriate response to the compliance problems at the two facilities.

Although the permit modifications do not address quality assurance procedures, we would like to suggest that the District make the requirement for an annual Relative Accuracy Test Audit (RATA) for NOx and CO an explicit condition in the permits. EPA's policy is that any continuous emissions monitors (CEMS) used to verify compliance with Best Available Control Technology emission limit should undergo an annual RATA. While the final title V permits issued to these sources do require compliance with 40 CFR 60, Appendix F, we believe this high level reference may not be sufficient to clarify the sources' responsibility.

If you have any questions, please do not hesitate to contact Roger Kohn of my staff at 415-744-1238.

Sincerely,

for Matt Haber
Chief, Permits Office
Air Division

cc: Ray Menebroker, ARB
John Campbell, Pacific Lumber Co.
Ron Auzenne, Fairhaven Power Co.

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- D. PSD NO2 INCREMENT ANALYSIS**
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FPC & TPL T5 Permit Revision

DRAFT

**PERMIT REVISION
FOR FAIRHAVEN POWER COMPANY, AND
THE PACIFIC LUMBER COMPANY**

WHO IS INVOLVED: Fairhaven Power Company(FPC), Fairhaven, and The Pacific Lumber Company(TPL), Scotia, operate modern (circa 1985-88) wood fired boilers which produce steam which drives a generator (and in the case of TPL also use the steam on site for process use). These plants are fueled with hogged wood wastes and the steam generated is used to produce electricity which is sold to Pacific Gas & Electric. All four boilers (three at TPL) are of the stoker type which means that the fuel is feed to a large horizontal grate system(combustion air mechanism) by pneumatic fuel spreaders.

INTRODUCTION: On June 2, 1999, the Hearing Board of the District granted one year variances(effective July 1, 1999) to Fairhaven Power Company and The Pacific Lumber Company for potential excess emissions of carbon monoxide and nitrogen oxides from their respective wood fired boiler operations. Both of these facilities were required to have CEMs for carbon monoxide, nitrogen oxides and oxygen installed and operational on July 1, 1999 for periodic monitoring purposes in their Title V permits. The monitoring prior to the July 1, 1999 date was done by annual batch testing and only a 3-hr average was necessary to establish the emissions rates. The 3-hr average is still represented in the Title V permit and is of concern since the CEM is a continuous method of emissions measurement. Continuous emissions measurement provides much more data for determining compliance compared to the annual batch testing. As a result of the increased emissions monitoring it was expected that the facilities would be in jeopardy of exceeding their emissions limitations. During batch testing, the boilers are operated under the best operating conditions available in order to achieve compliance. With data available on a continuous basis, boiler operations that are less than perfect will result in average emissions that are higher than during batch testing, and it was expected that the 3-hr average limits would be exceeded frequently. This is supported by some longer term testing that the District conducted at Fairhaven Power Company.

COMPLIANCE: *Section 42352 (1) of the California Health & Safety Code which relates to the findings required to be made by the Hearing Board in order to grant a variance states: "That the petitioner for a variance is, or will be, in violation of Section 41701 or of any rule, regulation or order of the District."*

Historically, FPC was the first plant of these two facilities permitted by the District and the third in the District to have Best Available Control Technology(BACT) applied to determine emissions limitations. BACT requires the use of the most up to date controls in use at the time for the control of emissions. In the case of these wood fired boilers, BACT was determined for particulate matter, and gaseous pollutants carbon monoxide, and nitrogen oxides. The limits set for these gaseous pollutants was derived from US EPA BACT Clearinghouse data and similar wood fired boilers in California at the time(~ 1985-88).

The method of controlling carbon monoxide and nitrogen oxides from these boilers are similar and consists of staged combustion controls using overfire and

undergrate air. Two levels of overfire air with front and rear ports for supplying the air to the boiler combustion chamber is typical. Preheated undergrate air is supplied to the fuel which is spread out over the horizontal grate system. Overfire air is important since it provides sufficient excess oxygen to totally combust the wood fines and combustible gases which are produced in the combustion chamber. These fines are the result of the type of wood wastes being combusted and become suspended due to the action of the pneumatic stoker/spreaders and also the undergrate air combustion process. Due to varying fuel conditions, the amounts of overfire and underfire air must be changed to obtain proper fuel combustion. This is automated to some extent by the boiler control system.

EMISSIONS ANALYSIS BY FACILITY(Pre July 1, 1999):

FPC: Since its startup in late 1986, FPC has had periods of noncompliance with their gaseous emissions limits. In the past, adjustments to air ratios had allowed the boiler to operate in compliance. However, current fuel characteristics have changed such that the ability to tune the boiler with air ratio adjustments has made it more difficult to achieve compliance with the gaseous air emissions.

In September 1995, the District performed continuous emissions testing for carbon monoxide and nitrogen oxides for a period of four days. This testing was performed in order to determine levels of gaseous emissions while the boiler was combusting seasonally dry wood wastes under typical boiler operating conditions. Another period of testing for four days in March 1996 while the boiler combusted wet wood wastes was also performed by the District. A summary of these testing results is as follows:

Gaseous Emissions Testing (lbs/million BTU heat input) (limits: CO - 0.60, NOx - 0.15)								
	Wood Moisture %	Carbon Monoxide			Nitrogen Oxides			
		Day	High Hr.	Low Hr.	Day	High Hr.	Low Hr.	
September 1995								
18 th - 19 th	54.0	1.40	2.27	0.87	0.17	0.20	0.13	
19 th - 20 th	53.1	1.81	2.81	0.98	0.17	0.21	0.13	
20 th - 21 st	52.6	1.81	2.66	1.03	0.17	0.19	0.13	
21 st - 22 nd	51.5	1.96	2.63	1.37	0.13	0.16	0.12	
Averages	52.8	1.75	2.59	1.06	0.16	0.19	0.13	
March 1996								
4 th - 5 th	64.4	2.54	4.88	1.29	0.14	0.22	0.12	
5 th - 6 th	65.6	2.71	3.26	1.82	0.14	0.16	0.12	
6 th - 7 th	62.8	2.56	3.02	1.76	0.13	0.15	0.12	
7 th - 8 th	62.6	2.13	3.36	0.61	0.14	0.17	0.12	
Averages	63.9	2.49	3.63	1.37	0.14	0.18	0.12	

For the period of testing in September 1995, FPC tried various amounts and distributions of overfire air as well as undergrate air mostly without any measurable success in reducing carbon monoxide emissions.

From the above data, the carbon monoxide was higher during the wet wood period in March 1996 compared to September 1995. This is due to the difficulty in combusting the high moisture content wood wastes. The plant was using a single natural gas burner to provide supplemental heat (maximum about 13% of total heat input) to the combustion chamber during this period but the boiler was not able to achieve maximum steam load. Carbon monoxide is formed by providing either too much oxygen or too little oxygen which results in efficient combustion of the fuel. The proper amount of excess oxygen for a particular fuel is important in order to efficiently combust that fuel. Nitrogen oxides were reduced in March compared to September mainly due to lower combustion and undergrate temperatures as a result of the wet wood wastes. Nitrogen oxides form from high temperature combustion as a result of the nitrogen in the fuel and in air.

Additional batch testing results:

Boiler	Test Date	CO, lb/MMBtu	NOx, lb/MMBtu
FPC	12/86	0.38	0.15
FPC	3/93	0.88	0.18
FPC	5/93	0.39	0.15
FPC	6/94	0.32	0.18
FPC	8/95	1.16	0.17

In 1997, the plant installed new overfire air injectors and a high pressure fan, and did work on the grate system to improve grate air flow uniformity and passed its compliance testing in June 1997.

FPC	6/97	0.65	0.16
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TPL: The long term testing performed on FPC was not performed on TPL since they have a CEM in one of the three boilers. Periodically, TPL has exceeded the limit of 0.60 lb/mmBTU for carbon monoxide. Most recently there have been six daily average occurrences of carbon monoxide at or greater than the limit(TPL, Boiler C with the CEM has a 24 hr. avg. limit):

<u>DATE, 1999</u>	<u>CO, lbs/mmBTU, 24 hr avg.</u>
Jan 27	0.60
Jan 28	0.75
Feb 19	0.61
Feb 26	1.00
Feb 27	0.91
Feb 28	1.03

The higher values are related to fuel quality, and moisture levels.

Additional batch testing results:

Boiler	Test Date	CO, lb/MMBtu	NOx, lb/MMBtu
A	9/88	0.36	0.15
B	9/88	0.66	0.13
A	5/93	0.32	0.11
B	5/93	0.22	0.11
A	7/94	0.63	0.167
B	7/94	0.56	0.173

Boiler C has a continuous emissions monitor for CO, NOx, and O₂. Compliance has only been a problem during very wet weather with poor fuel quality.

From the above data sets, it is obvious that information is available that shows compliance with the existing standards has been difficult at FPC and less of a problem at TPL. Staying in compliance with emissions limits based upon a 3 hr averaging time compared to a daily average is more difficult due to short term fuel feeding or fuel quality problems which cause combustion inefficiencies. The potential for noncompliance is very high based upon the data available.

CORRECTIVE ACTION: *Section 42352 (2) of the California Health & Safety Code which relates to the findings required to be made by the Hearing Board in order to grant a variance states: "That due to conditions beyond the reasonable control of the petitioner, requiring compliance would result in either (A) an arbitrary or unreasonable taking of property, or (B) the practical closing and elimination of a lawful business."*

Both facilities installed BACT, combustion air systems for gaseous pollutant control in the mid 1980's when the boilers were constructed. Since that time, one of the facilities, FPC, due to noncompliance with the limits, performed a major upgrade to its combustion air system in 1997 under variance to help reduce emissions of carbon monoxide and nitrogen oxides. TPL has not had similar compliance problems but did make some changes to the overfire air nozzles for better combustion chamber penetration. These combustion air systems are typical for these type of wood fired boilers, however not all boilers in Northern California have similar emissions limitations for the gaseous pollutants. The following is a summary of the emissions limitations for many of the stoker type boilers for comparison with the limits placed upon FPC, and TPL.

Current CO and NO_x Emission Limits at Other Hog Fuel-Fired Boilers in California

The District prepared a comprehensive summary of the CO and NO_x emission limits applied to all hog fuel-fired boilers in California in 1999. The FPC boiler, along with the three Pacific Lumber boilers, have the lowest CO limits in the state. CO limits range from 500 ppm to 3,500 ppm (corrected to 12 percent CO₂). NO_x limits range from 52 ppm to 126 ppm. The FPC boiler NO_x limit is 76 ppm. PE used the District's summary table to contact operators of boilers with CO limits at or below 1,200 ppm (equivalent to 1.5 lb/MMBtu). In addition a summary of the requirements for Sierra Pacific's Loyalton, CA boiler is included. The Loyalton boiler is essentially identical to FPC boiler, and is the only boiler from among those listed that has the same overfire air configuration as the FPC boiler. A list of the boilers evaluated, points-of-contact, CO and NO_x emission rates, and CEM averaging periods is provided in Table 2 below. A discussion of the compliance status of each one of the boilers listed in Table 2 is provided in the following paragraphs.

Table 2. List of Boilers Evaluated for Compliance with CO and NO_x Limits

Stoker Boiler Name/Location and Size (lb/hr steam)	Point-of-Contact and telephone	CO (at 12% CO ₂)	NO _x (at 12% CO ₂)	Ave. Period (hours)
Honey Lake Power, Wendel, CA 315,000 lb/hr	Ralph Sanders, 530-254-6161	588	52	24
Collins Pine Co., Chester, CA 140,000 lb/hr	Dennis Gomez, 530-258-2112	831	126	3
Ultrapower 3, Blue Lake, CA 118,000 lb/hr	Sonny Davi, 707-668-5631	833	76	3
Sierra Pacific, Burney, CA 212,000 lb/hr	Tom Broadway, 530-335-3681	921	76	24
Sierra Pacific, Quincy, CA 148,000 lb/hr	George Russell, 530-283-6732	963	115	3
Burney Mtn. Forest Products, Burney, CA 192,000 lb/hr (2 boilers)	Don Binger, 530-335-5027	1,200	61	24/3
Wheelabrator Shasta, Anderson, CA 216,000 lb/hr (3 boilers)	George Woodward, 530-365-9172	1,200	115	3
Sierra Pacific, Loyalton, CA 200,000 lb/hr	Bob Ellery, 530-378-8000	1,443	80	8

Honey Lake Power

The Honey Lake Power facility is located in the high desert on the east side of the Sierras, approximately 25 miles east of Susanville. The plant has been online since 1989. An anhydrous ammonia selective non-catalytic reduction (SNCR) system has been used since the inception of operations to control NO_x emissions. Premium wood fuel is used. This wood is a combination of slash clean-up (> 85 percent), pallet waste (~3 percent) and sawdust. The premium fuel is premixed with sawdust in a huge fuel area to ensure consistent feed to the boiler. The plant is located in a low relative humidity, desert environment with infrequent rain/snow.

Fuel moisture is low, ranging from 32 percent or less in summer to 40 percent or less in winter. The plant has a very experienced operator staff, and boiler tuning for maximum efficiency and emissions performance is practiced on a continuous basis.

CO and NO_x CEMs have been in use since the inception of operations. No significant CO or NO_x compliance problems have been experienced to date. The plant manager attributes the good emissions performance to four items:

1. Ideal fuel quality
2. Low fuel moisture
3. NO_x control system to control elevated NO_x emissions resulting from excellent combustion characteristics of the fuel
4. Excellent operating practices

There is some uncertainty as to how long the plant will have access to large quantities of premium wood fuel. The plant manager is concerned that emissions and boiler efficiency performance could degrade if the plant has to transition to a lower quality fuel base.

Collins Pine Company

The Collins Pine Company facility is located in a protected basin approximately 18 miles west of the crest of the Sierras at 4,500 feet elevation, in a weather shadow behind Mt. Lassen. The weather is generally dry with significant quantities of rain and snow in the winter months. Freezing conditions in winter create a frozen surface on the wood pile which protects the wood from subsequent rains to a degree. Fuel consists of a mixture of bark, sawdust and woodchips. A wood dryer has been onsite for 20-25 years and is used to dry fuel prior to combustion. A small covered area is used to store fuel exiting from the dryer. Exhaust gas is used as the heat source in the dryer to dry green wood.

A number of modifications have been made to the boiler and operating practices since the CO and NO_x CEMs came online approximately ten years ago. A big effort has been made to improve pile management practices. A steep pile contour is now formed when rain is predicted to improve the ability of the pile to shed water. The fuel dryer was upgraded last year to improve drying efficiency. Additional refractory was added to the bottom half of the boiler to increase thermal mass. These changes have improved the combustion characteristics of the boiler, though wet wood does at times limit airflow (and therefore maximum output).

The permit for the boilers allows for up to 500 hours per year of CO exceedances and 150 hours per year of NO_x exceedances. In 1999 the boiler exceeded the CO limit for 513 hours, and the NO_x limit for 13 hours. The plant manager predicts a much lower number of exceedance hours in 2000 as a result of a drier winter and improved operating practices. NO_x levels have increased as a result of the improvements to fuel handling and boiler combustion characteristics, though NO_x generally remains well below the permit limit of 0.25 lb/MMBtu.

Ultrapower 3

The Ultrapower 3 boiler has not been operated since the CO and NO_x CEMs were installed in early 1999. The unit was shut down on April 28, 1999 and has not been brought back online since that date.

Sierra Pacific Burney

The Sierra Pacific Burney plant is located approximately 50 miles northwest of the Collins Pine Company plant, to the east of the crest of the Cascades in a high desert environment. The weather is generally dry with significant quantities of rain and snow in the winter months. Fuel

quality is very good, consisting of a 50/50 mixture of chips/bark and sawdust. Fuel moisture is monitored four times a day. Fuel is mixed outside and is generally allowed to cure for 4-6 weeks. The preferred fuel moisture content is 50-55 percent. Fuel moisture is currently in the 58-61 percent range. Fuel moisture is typically under 50 percent in the summer months.

All new fuel is formed into a steep pile. Generally only the surface layer of the pile gets wet during inclement weather. All new fuel initially enters through the fuel house and is then pushed to outside fuel storage area. The fuel house can hold (approximately) a 12-hour fuel supply. During periods of wet weather, dry incoming fuel will be held in the fuel house to mix with wetter fuel from the fuel storage yard.

The plant is subject to a 24-hour averaging period for CO and NO_x. The unit is generally only operated at full load from 12 noon to 6 PM. It is not uncommon to exceed the CO limit during this time period. The average load over 24 hours in the winter months is in the 60-75 percent range. The CO concentration drops significantly during partial load operation. As a result the 24-hour average is within the CO limit. The average load increases in the summer to the 80-90 percent range. The fuel is significantly drier during the warmer months, counterbalancing the higher average load, and the boiler consistently operates within the CO compliance limit.

The CO and NO_x CEMs are currently being replaced and upgraded. The plant manager thinks that the new CEMs may produce somewhat different readings.

Sierra Pacific Quincy

The Sierra Pacific Quincy plant is located a few miles to the west of the crest of the Sierras in a foothill environment. The weather is generally dry with significant quantities of rain and snow in the winter months. A good mix of chips, bark, and hog fuel is necessary to minimize CO emissions. There is currently too much variety in the fuel being received by the facility to maintain a consistent fuel mix. If only chips are used it is very hard to keep the CO emissions within the compliance limit. CO will also increase considerably as moisture content increases in winter. Typical moisture content of the fuel is 40-50 percent in summer and 50-60 percent in winter.

The CO and NO_x CEMs were installed in December 1998. The facility began covering the fuel pile in the winter of 1999, using plastic tarps secured by tires as the cover material. The strategy used by the facility to stay within CO limits is to reduce boiler load as needed. The boiler is generally operated at rated load (20 MW

power output) in summer unless CO concentration approaches the permit limit. In wintertime the average load is generally in the 16 MW range.

The plant frequently has to reduce load when attempting to operate at or near rating to keep the CO concentration within the 3-hour limit. Typically the firing rate is reduced approximately 25

percent to drop the CO concentration into an acceptable range. Firing woodchips alone in the boiler results in major CO excursions. Blending bark and sawdust with woodchips is absolutely necessary to minimize these CO spikes.

Burney Mountain Forest Products

The two Burney Mountain Forest Products (BMFP) fixed-grate Riley Stoker boilers have been equipped with SNCR for NO_x control since the inception of operations in 1989. According to the plant manager, the plant receives a consistent and high quality hog fuel supply. The BMFP boilers have generally been in compliance with the 1.44 lb/MMBtu (1,200 ppm) 24-hour CO limit applied to the boilers. The BMFP units have the lowest NO_x emission limit, 0.12 lb/MMBtu NO_x, of any woodwaste-fired boiler in California except the Honey Lake unit. In 1995 the local air district imposed a 20 ppm ammonia slip limit on the SNCR system used in the BMFP boilers. The BMFP boilers can not meet the 20 ppm ammonia slip requirement and still meet the 0.12 lb/MMBtu NO_x limit. The BMFP boilers are currently operating under a variance from the 20 ppm ammonia slip limit.

Wheelabrator Shasta

The three boilers at Wheelabrator Shasta (WS) are equipped with SNCR for NO_x control. The WS boilers are subject to a 1.44 lb/MMBtu (1,200 ppm) 3-hour CO limit, and a 0.23 lb/MMBtu (115 ppm) 3-hour NO_x limit. PE has not yet spoken directly with the plant manager of the WS facility to determine the level of compliance over time with the CO and NO_x limits applicable to the plant. PE expects to contact the plant on May 2, 2000 to obtain more details on CO and NO_x emissions performance.

Sierra Pacific Loyalton

The Sierra Pacific Loyalton plant is located in the Sierras near the town of Truckee, CA. The boiler is essentially identical to the FPC Riley Stoker boiler, with the same grate and overfire air system. The Loyalton boiler is included in this analysis as it provides an example of the type of emissions performance that could be expected from the FPC boiler if a consistent supply of

relatively good fuel with moderate moisture content is available. The boiler fuel at Loyalton is relatively constant, consisting of sawmill residue with a relatively high percentage of fines. Fuel moisture content in winter averages 55-60 percent. Fuel moisture content in summer is less than 55 percent. An ammonia injection SNCR NO_x reduction system is used to control NO_x emissions to below the permit limit of 0.16 lb/MMBtu.

An 8-hour averaging period is applied to the CO and NO_x CEM data at Loyalton. Maintaining compliance with the CO limit of 1.73 lb/MMBtu is sometimes a problem when fuel moisture is in the 60 percent range. Periodic CO spikes above the permit limit do occur on occasion in winter when the fuel generally has a higher moisture content.

VARIANCE REQUEST: *Section 42352 (3) of the California Health & Safety Code which relates to the findings required to be made by the Hearing Board in order to grant a variance states: "That the closing or taking would be without a corresponding benefit in reducing air contaminants."*

The District requested a variance on behalf of FPC and TPL for a period of one year starting July 1, 1999 and expiring June 30, 2000, from the gaseous emissions limitations for their wood fired boilers. These limits are contained in the following District issued Federal Title 5 permits for each facility:

Fairhaven Power Company	NCU 096-12	Section III. B & C
The Pacific Lumber Co.	NCU 060-12	Section III. B & C

Beginning July 1, 1999 and ending March 31, 2000, the facilities will provide the following information to the District on monthly basis:

1. Daily summaries of hourly average emissions for carbon monoxide, nitrogen oxides, in ppm and lbs/mmBtu, and oxygen in percent.
2. Daily fuel moisture results.
3. Summary of testing for boiler optimization.

The purpose of gathering this data is (1) to determine if the facilities can operate in compliance with the existing emissions limitations, (2) determine what the emissions are on a continuous basis over a variety of averaging times, and (3) propose either no change to the current limitations, or a change to the limits and/or averaging period.

OPERATING CONDITIONS:

(1) BOILER - *Section 42352 (4) of the California Health & Safety Code which relates to the findings required to be made by the Hearing Board in order to grant a variance states: "That the applicant for the variance has given consideration to curtailing operations of the source in lieu of obtaining a variance."*

The District needs to gather emissions data under all types of operating conditions to properly assess whether or not the facilities can comply with existing emissions limits and if not what emissions limits should be in place for the variety of operating conditions that will occur during both the dry and wet seasons of the year.

Section 42352 (5) of the California Health & Safety Code which relates to the findings required to be made by the Hearing Board in order to grant a variance states: "During the period the variance is in effect, that the applicant will reduce excess emissions to the maximum extent feasible."

The District will monitor the facilities and their boiler firing practices to ensure that the combustion air systems are being fired in a manner that produces the lowest emissions of both carbon monoxide and nitrogen oxides. However, the District expects that the facilities will need some period of time to become familiar with changes to the control variables and resulting emissions in order to obtain the lowest emissions possible. The combustion air system can be optimized for the lowest emissions, but fuel quality variables will require considerable experimentation.

Therefore, the facilities will be required as result of this variance to reduce emissions to the lowest extent possible with existing control systems. However, this does not mean that compliance can be guaranteed.

(2) CEMS: Section 42352 (6) of the California Health & Safety Code which relates to the findings required to be made by the Hearing Board in order to grant a variance states: "During the period the variance is in effect, that the applicant will monitor or otherwise quantify emission levels from the source, if requested to do so by the district, and report these emission levels to the district pursuant to a schedule established by the district."

The facilities as required by permit conditions and the terms of this variance will supply the District with information that will enable the District to ascertain compliance with limits as well as determine potential changes to limits.

ANALYSIS OF CEM DATA COLLECTION(Post July 1, 1999):

For the period of the variance, emissions data collected from the CEMs at both FPC and TPL was analyzed by Powers Engineering, consultant to both facilities. A copy of these reports is attached.

FPC:

Summary of CO and NO_x CEM Results, May 1999 - January 2000

Month	Moisture Range (%)	Steamflow Range (1,000 lb/hr)	24-hour high CO/NO _x (lb/MMBtu)	24-hour low CO/NO _x (lb/MMBtu)	1-hour high CO/NO _x (lb/MMBtu)	1-hour low CO/NO _x (lb/MMBtu)
5-99	54-64	142-181	3.67, 0.15	1.02, 0.09	5.84, 0.18	0.32, 0.07
6-99	51-59	145-179	4.65, 0.22	0.81, 0.13	5.93, 0.27	0.49, 0.09
7-99	51-55	158-176	2.33, 0.15	1.12, 0.12	3.61, 0.17	0.60, 0.07
8-99	48-53	156-178	1.86, 0.15	1.23, 0.13	2.57, 0.16	0.54, 0.12
9-99	48-53	154-177	1.72, 0.15	0.92, 0.09	2.27, 0.18	0.40, 0.07
10-99	48-55	127-178	1.62, 0.15	0.81, 0.12	2.74, 0.18	0.17, 0.10
11-99	51-61	77-145	0.97, 0.24	0.71, 0.11	2.11, 0.36	0.12, 0.13
12-99	49-59	13-172	1.41, 0.26	0.82, 0.11	3.01, 0.31	0.23, 0.08
1-00	52-60	136-165	2.50, 0.16	0.90, 0.12	3.15, 0.21	0.29, 0.09

Note: CO and NO_x emission rates shown in table are for steamload of 100,000 lb/hr or greater.

The 3-hour CO emission rate exceeded the 3-hour CO emission limit greater than 95 percent of the time period analyzed. The NO_x 3-hour emission limit was exceeded approximately 10 percent of the time during the period July 1, 1999 through January 31, 2000.

TPL**Table 1. Boiler A Operating Conditions and Emissions Summary, July 1999 – Jan. 2000**

Month	Moisture Range (%)	Steamflow Range (1,000 lb/hr)	24-hour high CO/NO _x (lb/MMBtu)	24-hour low CO/NO _x (lb/MMBtu)	1-hour high CO/NO _x (lb/MMBtu)	1-hour low CO/NO _x (lb/MMBtu)
7-99	43-52	46-105	0.42, 0.12	off-line	0.66, 0.14	off-line
8-99	43-50	63-129	1.85, 0.15	0.51, 0.08	4.92, 0.18	0.12, 0.06
9-99	42-52	58-129	2.11, 0.17	0.51, 0.09	5.57, 0.21	0.11, 0.07
10-99	44-56	75-133	1.50, 0.14	0.23, 0.09	4.91, 0.18	0.14, 0.07
11-99	47-57	50-133	2.20, 0.14	0.18, 0.11	9.88, 0.19	0.11, 0.08
12-99	49-58	54-88	2.92, 0.17	0.27, 0.08	5.82, 0.17	0.16, 0.08
1-00	50-58	63-92	1.86, 0.14	0.23, 0.09	5.08, 0.16	0.13, 0.08

Note: CO and NO_x emission rates shown in table are for steamload of 100,000 lb/hr or greater.

Table 2. Boiler B Operating Conditions and Emissions Summary, May 1999 – Jan. 2000

Month	Moisture Range (%)	Steamflow Range (1,000 lb/hr)	24-hour high CO/NO _x (lb/MMBtu)	24-hour low CO/NO _x (lb/MMBtu)	1-hour high CO/NO _x (lb/MMBtu)	1-hour low CO/NO _x (lb/MMBtu)
7-99	43-52	54-105	0.37, 0.18	0.26, 0.17	0.98, 0.21	0.13, 0.15
8-99	43-50	63-129	2.22, 0.19	0.15, 0.13	5.65, 0.23	0.08, 0.10
9-99	42-52	58-129	2.27, 0.20	0.21, 0.13	6.34, 0.24	0.10, 0.09
10-99	44-56	53-133	1.45, 0.20	0.12, 0.13	7.36, 0.26	0.10, 0.10
11-99	47-57	67-138	1.19, 0.21	0.22, 0.12	3.90, 0.24	0.12, 0.10
12-99	49-58	54-88	3.95, 0.18	0.31, 0.08	8.89, 0.19	0.12, 0.06
1-00	51-58	63-92	2.28, 0.18	0.23, 0.10	6.34, 0.22	0.12, 0.08

Note: CO and NO_x emission rates shown in table are for steamload of 100,000 lb/hr or greater.

Table 3. Boiler C Operating Conditions and Emissions Summary, Jan. 2000 – March 2000

Month	Moisture Range (%)	Steamflow Range (1,000 lb/hr)	24-hour high CO/NO _x (lb/MMBtu)	24-hour low CO/NO _x (lb/MMBtu)	1-hour high CO/NO _x (lb/MMBtu)	1-hour low CO/NO _x (lb/MMBtu)
1-00	51-58	59-93	0.97, 0.22	0.08, 0.13	4.46, 0.28	0.11, 0.09
2-00	51-58	67-118	0.75, 0.23	0.20, 0.15	2.50, 0.27	0.10, 0.11
3-00	54-58	79-118	0.68, 0.26	0.21, 0.15	2.72, 0.27	0.13, 0.13

Note: CO and NO_x emission rates shown in table are for steamload of 100,000 lb/hr or greater.

The approximate percentage of time the 3-hour CO and NO_x emission limits were exceeded during the time periods evaluated for Boilers A, B, and C are shown below in Table 4.

Table 4. Percentage of Time CO and NO_x Emission Limits were Exceeded

Boiler	Time Period	Percentage of Time CO Limit Exceeded (%)	Percentage of Time NO _x Limit Exceeded (%)
A	July 1999 – January 2000	~75	<10
B	July 1999 – January 2000	~50	~50
C	January 2000 – March 2000	<10	>90

Fuel Moisture Variation During Evaluation Period

Fuel is stored in a covered fuel storage area at Pacific Lumber. Variations in moisture content are due to variations in moisture content in the sawmill production processes that supply the wood waste and are not directly related to inclement weather.

PSD/TITLE V PERMIT REVISIONS PROPOSAL:

Both facilities have PSD permits that were issued by the District in the mid 1980's. The emissions limitations from these PSD permits have been placed into the Title V permits for each facility. This PSD review is for the purpose of revising the carbon monoxide and nitrogen oxides emissions limits for each of the facilities based upon the data presented above.

PSD is intended to analyze air quality impacts and determine Best Available Control Technology(BACT) for modifications which occur at existing facilities that result in a net emissions increase of any regulated air pollutant. While this analysis is a recommendation for a permit revision which will allow for increased emissions limits for carbon monoxide and nitrogen oxides, the assumption that this change carries an increase in actual emissions will not be the case. The reality is that the emissions will stay the same as with the prior emissions limits. Only the method of monitoring the emissions was changed which caused the actual emissions to become better recognized. Continuous emissions data compared to 3 hours of data annually does in fact provide better data on which to base compliance. The existing emissions limits were not capable of being met on a continuous basis and were designed for short term compliance testing. At the time of the original issuance of the operating permits for these facilities, the data on which to base BACT emissions limits was limited and was derived from short term testing, not continuous data from a CEMs. Therefore, with the new July 1, 1999 requirement to utilize CEMs for data gathering, the fact that emissions were found to be exceeding the current limits was not surprising.

Due to the fact that no physical change to the boiler facilities has occurred, nor any operational change which would increase actual emissions, this permit revision will not consider any change in BACT for carbon monoxide and nitrogen oxides emissions. Instead a close examination of the data from the CEMs is necessary to properly determine new carbon monoxide and nitrogen oxides emissions limitations for these facilities. The impacts on ambient air quality and PSD increment however will be examined as well as additional impact analysis.

The District is proposing to reissue the PSD and Title V permits for both FPC and TPL with new emissions limits for carbon monoxide and nitrogen oxides. The revised limits take into account the fact that although the two facilities have very similar boilers, they do not have similar emissions levels, fuel quality or operational methods. This then will require that each facility be judged separately in order to determine emissions limits which are reasonable for use with continuous emissions monitoring.

FPC - The District is proposing two sets of emissions levels for dry and wet seasons of the year. A specific set of levels for the June 1 through October 31(Dry Season) and November 1 through May 31(Wet Season) is being proposed in order to account for the effects that rain has on fuel moisture and the inherent difficulty in combustion wood fuel which has high moisture levels. In addition, three tiers of emissions levels for each pollutant will be utilized for each of these seasonal periods.

June 1 - October 31(DRY SEASON):

Limits, lbs/mmbtu, 24 hr. avg.			
Tier	CO	NOx	
1	1.8	0.16	Base limit
2	>1.8 - 2.3	0.17 - 0.18	
3	>2.3 - 3.0	0.19 - 0.23	

November 1 - May 31(WET SEASON):

Limits, lbs/mmbtu, 24 hr. avg.			
Tier	CO	NOx	
1	2.5	0.16	Base limit
2	>2.5 - 3.3	0.17 - 0.18	
3	>3.3 - 4.0	0.19 - 0.23	

Tier 1 - Base limit, 24 hour average which is the lower limit, needs to be attained for the highest percentage of time.

The total 24 hourly averages per month of Tier 2 and Tier 3 which are greater than the Base limit may not exceed eight. In no case shall the total 24 hourly averages per month exceed 3 for Tier 3.

The tiered approach provides allowances for the inherent difficulty in handling and combusting wood wastes. Fuel feeding problems do arise which create upsets and increased emissions of carbon monoxide. These limits will recognize this problem and provide for some allowances to have higher emissions due to these difficulties. The problems are more pronounced during wet weather conditions and therefore the seasonal approach is also incorporated.

The emissions levels selected have been determined from the CEMS data with the realization that during this time period, FPC was required to perform optimization of the over/under fire air systems to attain reduced levels of carbon monoxide and nitrogen oxides. Due to this experimenting, emissions can be considered to be higher than would normally be expected once the air system optimization was determined and a familiarity with how to fire the boiler became recognized. In addition, the time period for the testing occurred during a period of time that normally has some high levels of rainfall. Unfortunately rainfall did not amount to the levels normally observed which created fuel that was drier than normal. This presents a problem for determining the wet season emissions levels and since the facility was down during some very wet weather early in 2000, no data is available for very high fuel moisture levels. FPC will be utilizing newly installed gas fired burners to help stabilize combustion in the boiler during periods of high fuel moisture, however the extent to which this will maintain emissions levels is uncertain. Therefore, a safety margin has been incorporated into the Dry Season limits to arrive at the Wet Season limits.

TPL - The District is proposing one set of emissions levels using a three tiered approach for each boiler. Boilers A & B have similar emission levels while Boiler C has a different personality; therefore differing limits are set for each.

Blr. A & B		Limits, lbs/mmbtu, 24 hr. avg.	
Tier	CO	NOx	
1	1.2	0.20	Base limit
2	>1.2 - 2.0	0.21 - 0.22	
3	>2.0 - 3.0	0.23 - 0.26	
Blr. C		Limits, lbs/mmbtu, 24 hr. avg.	
Tier	CO	NOx	
1	0.8	0.22	Base limit
2	>0.8 - 1.0	0.23 - 0.25	
3	>1.0 - 1.5	0.26 - 0.30	

Tier 1 - Base limit, 24 hour average which is the lower limit, needs to be attained for the highest percentage of time.

The total 24 hourly averages per month of Tier 2 and Tier 3 which are greater than the Base limit may not exceed eight. In no case shall the total 24 hourly averages per month exceed three for Tier 3.

The tiered approach provides allowances for the inherent difficulty in handling and combusting wood wastes. Fuel feeding problems do arise which create upsets and higher emissions of carbon monoxide. These limits will recognize this problem and provide for some allowances to have higher emissions due to these difficulties.

The emissions levels selected have been determined from the CEMS data with the realization that during this time period, TPL was required to perform optimization of the over/under fire air systems to attain reduced levels of carbon monoxide and nitrogen oxides. Due to this experimenting, emissions can be considered to be higher than would normally be expected once the air system optimization was determined and a familiarity with how to fire the boiler became recognized.

For both facilities, some days with high emissions levels can be attributed to breakdown conditions. Emissions during breakdown conditions are not counted against the limit. The CEMS should be setup to allow for the tagging of such episodes and the exclusion of this data from the daily averaging period.

PSD INCREMENT ANALYSIS

The major source baseline date for NO₂ was set by EPA as February 8, 1988. Since both the FPC and TPL initial applications for PSD permits were submitted prior to that date, no PSD increment consumption occurred for NO₂. The trigger date for minor source inclusion occurred with the submittal of the LP Recovery Furnace PSD application on 4/29/96 (even though the source began operating in 1990). All source (major and minor) NO₂ emissions changes in the baseline area (Humboldt County) after 4/29/96 must be totaled for the determination of impact on NO₂ increment. The amount of PSD increment which is allowed due to all source emissions increases and decreases is 25 micrograms per cubic meter for annual NO₂.

Increment consumption calculations must reflect only the ambient pollutant concentration change attributable to the increment affecting emissions. Therefore the emissions increases due to the revised emissions limits is calculated and any emissions reductions/increases in the area are used to reduce/increase the increment consuming emissions.

FPC - The following changes are detailed:

Change for FPC emission limits(NO₂:Allow to PTE; CO: Allow to PTE)

Company	Date	Change	CO(tpy)	NOx(tpy)
FPC	10-85	New Source	-588	-147
FPC	Rev.5-00	Revised limits	+3356	+232
	FPC	NET CHANGE	+2768	+85

Based upon the revised emissions limits only, FPC would have a significant net emissions increase for carbon monoxide and nitrogen oxides, and therefore it is necessary to determine the effect of the NO₂ emissions increase on increment.

Based upon worst case modeling for FPC using the Screen 3 model, an 85 tpy NO₂ emissions increase would result in an annual maximum impact of 0.80 ug/m³. This is less than the 1 ug/m³ significant impact area needed to determine increment consumption. A more refined impact analysis performed using ISCST model shows an annual impact of only 0.04 ug/m³.

Since the baseline date for the PSD area, there have been several changes at nearby major and minor facilities that would affect the ambient concentrations in the vicinity of FPC:

Company	Date	Change	CO(tpy)	NOx(tpy)
Simpson Paper Co. LP Corp.	3-93	Closed	-2152	-745
Boilers LP Corp.	8-92	Closed	-1403	-281
Recovery LP New	10-90	Closed	-240	-192
Recovery LP New	11-90	New Source	+72	+257
Incinerator	1995	New Source	+3	+104
		NET CHANGE	-3720	-857

Considering the large reductions that have occurred, the net emissions impact on ambient air quality is beneficial.

Change	CO(tpy)	NOx(tpy)
FPC Revision	+2768	+85
Pre 2000 Emissions	-3720	-857
NET CHANGE	-952	-772

total emissions changes in the area including the revised FPC limits since the baseline date for NO₂.

Based upon the foregoing emissions analysis, no PSD increment will be consumed by the revised FPC emissions limits.

TPL

Based upon the use of the OLM which uses ozone background concentrations estimated to be present in the area of the impacts, the following maximum impacts have been determined using the ISCST model.

Pollutant	Impact ug/m3	Existing ug/m3	Total ug/m3	CAAQS ug/m3	NAAQS	Ave.TIME	ug/m3
NO2	6.4	5.4*1	11.8	470	100 ug/m3	1-hr Annual	
CO			11,645*2 7,307*2	23,000 10,000	40,000 10,000	1-hr 8-hr	

*1 Existing are maximum ambient concentrations calculated from the ISCST model using existing emissions.

*2 Impacts for non-increment consuming averaging times are determined from worst case total emissions from all TPL sources in order to compare concentrations with ambient air quality standards[AAQS - California(C); National(N)].

NO2 INCREMENT CONSUMPTION: 6.4 micrograms per cubic meter

NO2 Increment allowance is 25 ug/m3, so this allows additional deterioration of 18.6 ug/m3 in within the 1 ug/m3 impact area.

Additional Impact Analysis for PSD

- A. **Impact on Class I areas** - All Class I areas are sufficiently far away that NO2 increments will not be impacted by either of the projects.
- B. **Growth Impacts** - Since these projects do not involve new construction no growth inducing impacts are associated with the revisions to the emissions limitations.
- C. **Soils and Vegetation Impacts** - While emissions of carbon monoxide and nitrogen oxides will increase, the increases will be below NAAQS. For most types of soils and vegetation, ambient concentrations of these criteria pollutants below the standards will not result in harmful effects.
- D. **Visibility Impairment Analysis** - The screening procedures for this analysis were utilized when both facilities were initially constructed. Those analysis did not show any indication that the emissions levels at that time would produce visibility impairment. Based upon the emissions increases(non particulate matter), no significant change to visibility will result.

PROPOSED PERMIT REVISIONS FPC

A. Combustion Processes

(1) Permit Number - **NS-072(Steam Generator).**
Name - Boiler

I. BASIC EQUIPMENT - The permittee operates a 180,000 pounds steam per hour (316 million Btu/hr heat input) boiler manufactured by Riley Stoker Company. A 15 million Btu/hr ash reburn chamber is utilized to burn the carbon contained in the ash from the air preheater dropout, multiclone dropout and electrostatic precipitator. Heat from the reburn chamber is directed into the combustion chamber above the grates. A 60 million Btu/hr natural gas burner Dual 40 million Btu/hr natural gas burners are used to supply heat for startups, shutdowns, and periods of poor wood combustion.

II. CONTROL EQUIPMENT - Particulate matter is controlled with mechanical multiclones followed by an electrostatic precipitator manufactured by General Electric Co. The unit has three separate transformer/rectifier fields and a collection plate area of 42,000 sq.ft. Two of the fields are rated at 50 KVA and one at 35 KVA. A forced overfire air system is utilized to help control gaseous emissions.

III EMISSIONS LIMITATIONS

A. Particulate Matter

1. Particulate loading - The permittee shall not discharge particulate matter into the atmosphere in excess of 0.04 pounds per million Btu of heat input [Regulation 1, Rule 220(b) Authority to Construct dated 1/14/87 and reissued on 4/26/89 and 9/24/91].

2. Visible emissions - The permittee shall not cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. The opacity standard applies at all times except during periods of startup, shutdown, or malfunction [40 CFR 60.43b(f)] [Regulation 1, Rule 220(b) Authority to Construct dated 1/14/87 and reissued on 4/26/89 and 9/24/91].

B. Carbon Monoxide - The permittee shall not discharge carbon monoxide into the atmosphere in excess of 0.60 pounds per million Btu of heat input on a 3-hour average basis [Regulation 1, Rule 220(b) Authority to Construct dated 1/14/87 and reissued on 4/26/89 and 9/24/91].

B. Carbon Monoxide - The permittee shall not discharge carbon monoxide into the atmosphere on a 24 hour average basis in excess of the following allowances:

June 1 - October 31 (DRY SEASON):

		Limits, lbs/mmmbtu, 24 hr. avg.
Tier	CO	
1	1.8	Base limit
2	>1.8 - 2.3	
3	>2.3 - 3.0	

November 1 - May 31 (WET SEASON):

		Limits, lbs/mmmbtu, 24 hr. avg.
Tier	CO	
1	2.5	Base limit
2	>2.5 - 3.3	
3	>3.3 - 4.0	

Tier 1 - Base limit, 24 hour average which is the lower limit, needs to be attained for the highest percentage of time.

The total 24 hourly averages per month of Tier 2 and Tier 3 which are greater than the Base limit may not exceed eight. In no case shall the total 24 hourly averages per month exceed 3 for Tier 3.

C. Nitrogen Oxides - The permittee shall not discharge nitrogen oxides (as nitrogen dioxide) into the atmosphere in excess of 0.15 pounds per million Btu of heat input on a 3-hour average basis [Regulation 1, Rule 220(b)] Authority to Construct dated 1/14/87 and reissued on 4/26/89 and 9/24/91].

C. Nitrogen Oxides - The permittee shall not discharge nitrogen oxides (as NO₂) into the atmosphere on a 24 hour average basis in excess of the following allowances:

Limits, lbs/mmBtu, 24 hr. avg.

Tier	NOx	Base limit
1	0.16	
2	0.17 - 0.18	
3	0.19 - 0.23	

Tier 1 - Base limit, 24 hour average which is the lower limit, needs to be attained for the highest percentage of time.

The total 24 hourly averages per month of Tier 2 and Tier 3 which are greater than the Base limit may not exceed eight. In no case shall the total 24 hourly averages per month exceed 3 for Tier 3.

IV. COMPLIANCE MONITORING

A. The following methods shall be used for determining compliance with the above emissions limitations:

1. Particulate Matter - CARB Method 5 or other EPA approved method.

The permittee shall be required to have particulate matter from the boiler tested once per calendar year. If the compliance test result is less than one-half the permitted limit, then the next year compliance test may be waived by the District [Regulation 1, Rule 240(d)].

2. Visible Emissions - The permittee shall operate at all times a continuous opacity monitoring system (COMS) [40 CFR 60.48b(a)].

a. 40 CFR 60, Appendix B, Performance Specification 1 shall be the basis for the operation of the COMS [40 CFR 60.49b(b)].

3. Carbon Monoxide and Nitrogen Oxides - The permittee shall operate at all times and maintain a continuous emissions monitoring system (CEMS) for the determination of carbon monoxide, nitrogen oxides, and oxygen from the boiler. The CEMS shall be operated in conformance with 40 CFR, Part 60, Appendix B, Performance Specifications, and Appendix F, Quality Assurance Procedures [Regulation 1, Rule 240(d)].

Monitoring shall be conducted in accordance with 40 CFR Part 60.13 unless a more restrictive requirement is contained in the permit.

V. REPORTING AND RECORDKEEPING - see General Provisions, section F.

A. The permittee shall maintain data on the operation of the boiler which shall include the temperature, pressure and flow of steam production [Regulation 1, Rule 220(b)] Authority to Construct dated 1/14/87 and reissued on 4/26/89 and 9/24/91].

B. The permittee shall maintain records of opacity 6-minute averages [40 CFR 60.49b(f)].

C. The permittee shall report all occurrences of excess emissions to the District in accordance with the timing requirements of Regulation 1, Rule 540, Equipment Breakdown [Regulation 1, Rule 240(d)].

D. A monthly report shall be required which identifies any deviation from these permit requirements including a summary of those deviations attributable to breakdowns reported in accordance with Rule 540. This report shall also include the daily and monthly averages of carbon monoxide, nitrogen oxides, and oxygen emissions. The report shall be due no later than the fifteenth day of the following month [Regulation 1, Rule 240(d)].

E. The permittee shall maintain records of the hourly, daily and monthly averages for carbon monoxide, nitrogen oxides, and oxygen [Regulation 1, Rule 240(d)].

F. The permittee shall maintain natural gas fuel usage information in order to calculate the annual capacity factor [40 CFR 60.49b(d)].

VI. OPERATING CONDITIONS - see General Provisions, section C.

A. The boiler shall be fired only with wood wastes and natural gas. Wood waste means sawmill or lumber wastes; or vegetation which are not treated with any chemicals. Painted wood is allowable provided that the paint is tested for lead. Lumber painted with lead based paints shall not be burned in the boiler[Regulation 1, Rule 240(d)].

B. The steam production from the boiler shall not exceed 180,000 pounds per hour on a monthly average basis[Regulation 1, Rule 220(b) Authority to Construct dated 1/14/87 and reissued on 4/26/89 and 9/24/91].

C. The permittee shall continuously operate and maintain an electrostatic precipitator on the exhaust of the boiler[Regulation 1, Rule 220(b) Authority to Construct dated 1/14/87 and reissued on 4/26/89 and 9/24/91].

D. The annual capacity factor for natural gas shall not exceed 10% for a calendar year[40 CFR 60.44b(d)]. This equates to a limitation of 270 million cubic feet of natural gas per calendar year. The annual capacity factor for natural gas is determined by dividing the actual heat input to the steam generating unit during the calendar year from the combustion of natural gas, by the potential heat input to the steam generating unit if the steam generating unit had been operated for 8,760 hours at the maximum design heat input capacity[40 CFR 60.43b(e)].

TPL(A & B)

A. Combustion Processes

(1) Permit Number - **NS-074(Steam Generator).**

Name - Boiler A

I. BASIC EQUIPMENT - The permittee operates a 150,000 pounds steam per hour (235 million Btu/hr heat input) boiler manufactured by Riley Stoker Company. A 90 million Btu/hr diesel oil burner is used to supply heat for startups.

II. CONTROL EQUIPMENT - Particulate matter is controlled with multiple cyclones followed by an electrostatic precipitator manufactured by General Electric Co. The unit has three separate transformer/rectifier fields and a collection plate area of 42,120 sq.ft. Two of the fields are rated at 50 KVA and one at 35 KVA. A forced overfire air system is utilized to help control gaseous emissions.

III EMISSIONS LIMITATIONS

A. Particulate Matter

1. Particulate loading - The permittee shall not discharge particulate matter into the atmosphere in excess of 0.04 pounds per million Btu of heat input[Regulation 1, Rule 220(b) Authority to Construct dated 12/2/86 and reissued on 5/30/90 and 9/24/91].

2. Visible emissions - The permittee shall not cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. The opacity standard applies at all times except during periods of startup, shutdown, or malfunction[40 CFR 60.43b(f)[Regulation 1, Rule 220(b) Authority to Construct dated 12/2/86 and reissued on 5/30/90 and 9/24/91].

B. Carbon Monoxide - The permittee shall not discharge carbon monoxide into the atmosphere in excess of 0.60 pounds per million Btu of heat input on a 3-hour average basis[Regulation 1, Rule 220(b) Authority to Construct dated 12/2/86 and reissued on 5/30/90 and 9/24/91].

B. Carbon Monoxide - The permittee shall not discharge carbon monoxide into the atmosphere on a 24 hour average basis in excess of the following allowances:

Limits, lbs/mmbtu, 24 hr. avg.

Tier	CO	Base limit
1	1.2	
2	>1.2 - 2.0	
3	>2.0 - 3.0	

Tier 1 - Base limit, 24 hour average which is the lower limit, needs to be attained for the highest percentage of time.

The total 24 hourly averages per month of Tier 2 and Tier 3 which are greater than the Base limit may not exceed eight. In no case shall the total 24 hourly averages per month exceed 3 for Tier 3.

C. Nitrogen Oxides - The permittee shall not discharge nitrogen oxides (as nitrogen dioxide) into the atmosphere in excess of 0.15 pounds per million Btu of heat input on a 3-hour average basis [Regulation 1, Rule 220(b) Authority to Construct dated 12/2/86 and reissued on 5/30/90 and 9/24/91].

C. Nitrogen Oxides - The permittee shall not discharge nitrogen oxides (as NO₂) into the atmosphere on a 24 hour average basis in excess of the following allowances:

Limits, lbs/mmbtu, 24 hr. avg.

Tier	NOx	
1	0.20	Base limit
2	0.21 - 0.22	
3	0.23 - 0.26	

Tier 1 - Base limit, 24 hour average which is the lower limit, needs to be attained for the highest percentage of time.

The total 24 hourly averages per month of Tier 2 and Tier 3 which are greater than the Base limit may not exceed eight. In no case shall the total 24 hourly averages per month exceed 3 for Tier 3.

IV. COMPLIANCE MONITORING

A. The following methods shall be used for determining compliance with the above emissions limitations:

1. Particulate Matter - CARB Method 5 or other EPA approved method.

The permittee shall be required to have particulate matter from the boiler tested once per calendar year. If the compliance test result is less than one-half the permitted limit, then the next year compliance test may be waived by the District [Regulation 1, Rule 240(d)].

2. Visible Emissions - The permittee shall operate at all times a continuous opacity monitoring system (COMS) [40 CFR 60.48b(a)].

a. 40 CFR 60, Appendix B, Performance Specification 1 shall be the basis for the operation of the COMS [40 CFR 60.49b(b)].

3. Carbon Monoxide and Nitrogen Oxides - The permittee shall operate at all times and maintain a continuous emissions monitoring system (CEMS) for the determination of carbon monoxide, nitrogen oxides and oxygen from the boiler [Regulation 1, Rule 220(b) Authority to Construct dated 12/2/86 and reissued on 5/30/90 and 9/24/91]. The CEMS shall be operated in conformance with 40 CFR, Part 60, Appendix B, Performance Specifications, and Appendix F, Quality Assurance Procedures [Regulation 1, Rule 240(d)].

Monitoring shall be conducted in accordance with 40 CFR Part 60.13 unless a more restrictive requirement is contained in the permit.

V. REPORTING AND RECORDKEEPING - see General Provisions, section F.

A. The permittee shall maintain data on the operation of the boiler which shall include the temperature, pressure and flow of steam production [Regulation 1, Rule 220(b) Authority to Construct dated 12/2/86 and reissued on 5/30/90 and 9/24/91].

B. The permittee shall maintain records of opacity 6-minute averages [40 CFR 60.49b(f)].

C. The permittee shall report all occurrences of excess emissions to the District in accordance with the timing requirements of Regulation 1, Rule 540, Equipment Breakdown [Regulation 1, Rule 240(d)].

D. A monthly report of the daily and monthly averages of carbon monoxide, nitrogen oxides, and oxygen emissions shall be submitted to the District with the monthly monitoring report required in General Provisions section F.6. [Regulation 1, Rule 240(d)].

E. The permittee shall maintain records of the hourly, daily and monthly averages for carbon monoxide, nitrogen oxides, and oxygen [Regulation 1, Rule 240(d)].

F. The permittee shall maintain diesel oil fuel usage information in order to calculate the annual capacity factor [40 CFR 60.49b(d)].

G. The permittee shall maintain a log of the nitrogen content of the diesel oil received as fuel for the boiler. Nitrogen content shall be measured using the most current ASTM method, by methods approved by the District, or as certified by the supplier[40 CFR 60.44b(k)].

H. The permittee shall maintain a log of the amount, type of paper, date and time of any paper wastes burned in the boiler.

VI. OPERATING CONDITIONS - see General Provisions, section C.

A. The boiler shall be fired only with wood wastes, diesel oil and paper wastes. Wood waste means sawmill or lumber wastes, or vegetation which are not treated with any chemicals. Painted wood is allowable provided that the paint is tested for lead. Lumber painted with lead based paints shall not be burned in the boiler. Paper wastes means newspaper, cardboard and any other paper excluding mixed paper from magazines or junk mail, or glossy paper waste. Paper waste use may not exceed 1 ton per day and must be less than 10% of the volume of the wastes burned in the boiler in a hour[Regulation 1, Rule 240(d)].

B. The steam production from the boiler shall not exceed 150,000 pounds per hour, or in excess of 370,000 pounds per hour total for Boiler A, Boiler B and Boiler C on a monthly average basis[Regulation 1, Rule 220(b) Authority to Construct dated 1/14/87 and reissued on 4/26/89 and 9/24/91].

C. The permittee shall continuously operate and maintain an electrostatic precipitator on the exhaust of the boiler[Regulation 1, Rule 220(b) Authority to Construct dated 1/14/87 and reissued on 4/26/89 and 9/24/91].

D. The permittee shall not combust diesel oil with a nitrogen content greater than 0.30% by weight[40CFR 60.44b(k)].

E. The annual capacity factor for diesel oil shall not exceed 10% for a calendar year[40 CFR 60.44b(k)]. This equates to a limitation of 1.47 million gallons of diesel oil per calendar year. The annual capacity factor for diesel oil is determined by dividing the actual heat input to the steam generating unit during the calendar year from the combustion of diesel oil, by the potential heat input to the steam generating unit if the steam generating unit had been operated for 8,760 hours at the maximum design heat input capacity[40 CFR 60.43b(e)].

TPL C

(3) Permit Number - **NS-076(Steam Generator).**
Name - **Boiler C**

I. BASIC EQUIPMENT - The permittee operates a 150,000 pounds steam per hour (235 million Btu/hr heat input) boiler manufactured by Riley Stoker Company. A 90 million Btu/hr diesel oil burner is used to supply heat for startups.

II. CONTROL EQUIPMENT - Particulate matter is controlled with multiple cyclones followed by an electrostatic precipitator manufactured by General Electric Co. The unit has three separate transformer/rectifier fields and a collection plate area of 42,120 sq.ft. Two of the fields are rated at 50 KVA and one at 35 KVA. A forced overfire air system is utilized to help control gaseous emissions.

III EMISSIONS LIMITATIONS

A. Particulate Matter

1. Particulate loading - The permittee shall not discharge particulate matter into the atmosphere in excess of 0.04 pounds per million Btu of heat input[Regulation 1, Rule 220(b) Authority to Construct dated 12/2/86 and reissued on 5/30/90 and 9/24/91].

2. Visible emissions - The permittee shall not cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. The opacity standard applies at all times except during periods of startup, shutdown, or malfunction[40 CFR 60.43b(f)][Regulation 1, Rule 220(b) Authority to Construct dated 12/2/86 and reissued on 5/30/90 and 9/24/91].

B. Carbon Monoxide - The permittee shall not discharge carbon monoxide into the atmosphere in excess of 0.60 pounds per million Btu of heat input on a 24-hour average basis [Regulation 1, Rule 220(b) Authority to Construct dated 12/2/86 and reissued on 5/30/90 and 9/24/91].

B. Carbon Monoxide - The permittee shall not discharge carbon monoxide into the atmosphere on a 24 hour average basis in excess of the following allowances:

Limits, lbs/mmbtu, 24 hr. avg.

Tier	CO	
1	0.8	Base limit
2	>0.8 - 1.0	
3	>1.0 - 1.5	

Tier 1 - Base limit, 24 hour average which is the lower limit, needs to be attained for the highest percentage of time.

The total 24 hourly averages per month of Tier 2 and Tier 3 which are greater than the Base limit may not exceed eight. In no case shall the total 24 hourly averages per month exceed 3 for Tier 3.

C. Nitrogen Oxides - The permittee shall not discharge nitrogen oxides (as nitrogen dioxide) into the atmosphere in excess of 0.15 pounds per million Btu of heat input on a 24-hour average basis [Regulation 1, Rule 220(b) Authority to Construct dated 12/2/86 and reissued on 5/30/90 and 9/24/91].

C. Nitrogen Oxides - The permittee shall not discharge nitrogen oxides (as NO₂) into the atmosphere on a 24 hour average basis in excess of the following allowances:

Limits, lbs/mmbtu, 24 hr. avg.

Tier	NOx	
1	0.22	Base limit
2	0.23 - 0.25	
3	0.26 - 0.30	

Tier 1 - Base limit, 24 hour average which is the lower limit, needs to be attained for the highest percentage of time.

The total 24 hourly averages per month of Tier 2 and Tier 3 which are greater than the Base limit may not exceed eight. In no case shall the total 24 hourly averages per month exceed 3 for Tier 3.

IV. COMPLIANCE MONITORING

A. The following methods shall be used for determining compliance with the above emissions limitations:

1. Particulate Matter - CARB Method 5 or other EPA approved method.

The permittee shall be required to have particulate matter from the boiler tested once per calendar year. If the compliance test result is less than one-half the permitted limit, then the next year compliance test may be waived by the District [Regulation 1, Rule 240(d)].

2. Visible Emissions - The permittee shall operate at all times a continuous opacity monitoring system (COMS) [40 CFR 60.48b(a)].

a. 40 CFR 60, Appendix B, Performance Specification 1 shall be the basis for the operation of the COMS [40 CFR 60.49b(b)].

3. Carbon Monoxide and Nitrogen Oxides - The permittee shall operate at all times and maintain a continuous emissions monitoring system (CEMS) for the determination of carbon monoxide, nitrogen oxides and oxygen from the boiler. The CEMS shall be operated in conformance with 40 CFR, Part 60, Appendix B, Performance Specifications, and Appendix F, Quality Assurance Procedures [Regulation 1, Rule 240(d)].

Monitoring shall be conducted in accordance with 40 CFR Part 60.13 unless a more restrictive requirement is contained in the permit.

V. REPORTING AND RECORDKEEPING - see General Provisions, section F.

A. The permittee shall maintain data on the operation of the boiler which shall include the temperature, pressure and flow of steam production [Regulation 1, Rule 220(b) Authority to Construct dated 12/2/86 and reissued on 5/30/90 and 9/24/91].

B. The permittee shall maintain records of opacity 6-minute averages [40 CFR 60.49b(f)].

C. The permittee shall report all occurrences of excess emissions to the District in accordance with the timing requirements of Regulation 1, Rule 540, Equipment Breakdown[Regulation 1, Rule 240(d)].

D. A monthly report of the daily and monthly averages of carbon monoxide, nitrogen oxides, and oxygen emissions shall be submitted to the District with the monthly monitoring report required in General Provisions section F.6.[Regulation 1, Rule 240(d)].

E. The permittee shall maintain records of the hourly, daily and monthly averages for carbon monoxide, nitrogen oxides, and oxygen beginning July 1, 1999[Regulation 1, Rule 240(d)].

F. The permittee shall maintain diesel oil fuel usage information in order to calculate the annual capacity factor[40 CFR 60.49b(d)].

G. The permittee shall maintain a log of the nitrogen content of the diesel oil received as fuel for the boiler. Nitrogen content shall be measured using the most current ASTM method, by methods approved by the District, or as certified by the supplier[40 CFR 60.44b(k)].

H. The permittee shall maintain a log of the amount, type of paper, date and time of any paper wastes burned in the boiler.

VI. OPERATING CONDITIONS - see General Provisions, section C.

A. The boiler shall be fired only with wood wastes, diesel oil and paper wastes. Wood waste means sawmill or lumber wastes, or vegetation which are not treated with any chemicals. Painted wood is allowable provided that the paint is tested for lead. Lumber painted with lead based paints shall not be burned in the boiler. Paper wastes means newspaper, cardboard and any other paper excluding mixed paper from magazines or junk mail, or glossy paper waste. Paper waste use may not exceed 1 ton per day and must be less than 10% of the volume of the wastes burned in the boiler in a hour[Regulation 1, Rule 240(d)].

B. The steam production from the boiler shall not exceed 150,000 pounds per hour, or in excess of 370,000 pounds per hour total for Boiler A, Boiler B and Boiler C on a monthly average basis[Regulation 1, Rule 220(b) Authority to Construct dated 1/14/87 and reissued on 4/26/89 and 9/24/91].

C. The permittee shall continuously operate and maintain an electrostatic precipitator on the exhaust of the boiler[Regulation 1, Rule 220(b) Authority to Construct dated 1/14/87 and reissued on 4/26/89 and 9/24/91].

D. The permittee shall not combust diesel oil with a nitrogen content greater than 0.30% by weight[40CFR 60.44b(k)].

E. The annual capacity factor for diesel oil shall not exceed 10% for a calendar year[40 CFR 60.44b(k)]. This equates to a limitation of 1.47 million gallons of diesel oil per calendar year. The annual capacity factor for diesel oil is determined by dividing the actual heat input to the steam generating unit during the calendar year from the combustion of diesel oil, by the potential heat input to the steam generating unit if the steam generating unit had been operated for 8,760 hours at the maximum design heat input capacity[40 CFR 60.43b(e)].

Calculations:

FPC

Historical emissions from FPC are determined based upon operations over the past two years(1998 and 1999).

The emissions of both carbon monoxide and nitrogen oxides are exceeding the current 3-hr average emissions limitations, so the maximum allowable limits at the operating rates for these two years is used to determine historical emission rates.

1998 - Operating days 355; heat input = 2,220,000 million Btu

NOx @ 0.15 lbs/mmbtu x 2,220,000 mmbtu = 330,000 lbs = 165 tons

CO @ 0.60 lbs/mmbtu x 2,220,000 mmbtu = 1,332,000 lbs = 666 tons

1999 - Operating days 273; heat input = 1,700,000 million Btu

NOx @ 0.15 lbs/mmbtu x 1,700,000 mmbtu = 255,000 lbs = 128 tons

CO @ 0.60 lbs/mmbtu x 1,700,000 mmbtu = 1,020,000 lbs = 510 tons

Average for 2 years:

NOx = 165 + 128 = 147 tons

CO = 666 + 510 = 588 tons

Permit Revision PTE:

Heat Input capacity = 316 mmbtu/hr

NOx limits(worst case):

22 days @ 0.16 lbs/mmbtu x 316 mmbtu = 13.3 tpm = 160 tpy

5 days @ 0.18 lbs/mmbtu x 316 mmbtu = 3.4 tpm = 41 tpy

3 days @ 0.23 lbs/mmbtu x 316 mmbtu = 2.6 tpm = 31 tpy

Total NOx = 232 tpy

CO limits(5 dry months/yr)

22 days @ 1.8 lbs/mmbtu x 316 mmbtu = 150 tpm = 751 tpy

5 days @ 2.3 lbs/mmbtu x 316 mmbtu = 44 tpm = 218 tpy

3 days @ 3.0 lbs/mmbtu x 316 mmbtu = 34 tpm = 171 tpy

Subtotal CO, dry months = 1140 tpy

CO limits(7 wet months/yr)

22 days @ 2.5 lbs/mmbtu x 316 mmbtu = 209 tpm = 1460 tpy

5 days @ 3.3 lbs/mmbtu x 316 mmbtu = 63 tpm = 438 tpy

3 days @ 4.0 lbs/mmbtu x 316 mmbtu = 45 tpm = 318 tpy

Subtotal CO, wet months = 2216 tpy

Total CO = 3356 tpy

TPL

Historical emissions from TPL are determined based upon operations over the past two years(1998 and 1999).

The emissions of both carbon monoxide and nitrogen oxides are exceeding the current 3-hr average emissions limitations, so the maximum allowable limits at the operating rates for these two years is used to determine historical emission rates.

1998 - Heat input = 3,550,000 million Btu

NOx @ 0.15 lbs/mmbtu x 3,550,000 mmbtu = 330,000 lbs = 266 tons

CO @ 0.60 lbs/mmbtu x 3,550,000 mmbtu = 2,130,000 lbs = 1065 tons

1999 - Heat input = 3,100,000 million Btu

NOx @ 0.15 lbs/mmbtu x 3,100,000 mmbtu = 465,000 lbs = 233 tons

CO @ 0.60 lbs/mmbtu x 3,100,000 mmbtu = 1,860,000 lbs = 930 tons

Average for 2 years:

NOx = 266 + 233 = 250 tons

CO = 1065 + 930 = 998 tons

Permit Revision PTE:

Heat Input capacity = 194 mmbtu/hr each of 3 boilers

NOx limits(worst case A + B Blrs):

22 days @ 0.20 lbs/mmbtu x 388 mmbtu = 20.5 tpm = 246 tpy

5 days @ 0.22 lbs/mmbtu x 388 mmbtu = 5.1 tpm = 61 tpy

3 days @ 0.26 lbs/mmbtu x 388 mmbtu = 3.6 tpm = 44 tpy

SubTotal NOx = 351 tpy

NOx limits(worst case C Blr):

22 days @ 0.22 lbs/mmbtu x 194 mmbtu = 11.3 tpm = 135 tpy

5 days @ 0.25 lbs/mmbtu x 194 mmbtu = 2.9 tpm = 35 tpy

3 days @ 0.30 lbs/mmbtu x 194 mmbtu = 2.1 tpm = 25 tpy

SubTotal NOx = 195 tpy

Total NOx = 546 tpy

CO limits(boilers A + B)

22 days @ 1.2 lbs/mmbtu x 388 mmbtu = 123 tpm = 1475 tpy

5 days @ 2.0 lbs/mmbtu x 388 mmbtu = 47 tpm = 559 tpy

3 days @ 3.0 lbs/mmbtu x 388 mmbtu = 42 tpm = 503 tpy

Subtotal CO, (Blrs A + B) = 2537 tpy

CO limits(Boiler C)

22 days @ 0.8 lbs/mmbtu x 194 mmbtu = 41 tpm = 492 tpy

5 days @ 1.0 lbs/mmbtu x 194 mmbtu = 12 tpm = 140 tpy

3 days @ 1.5 lbs/mmbtu x 194 mmbtu = 11 tpm = 126 tpy

Subtotal CO, Blr C = 758 tpy

Total CO = 3295 tpy

TPL Modeling Emissions Rates

NO2 Annual: The increase in NO2 from the higher emissions limits is determined from the new limits minus the existing emissions:

New Plant = 546 tpy
Old Plant = 250 tpy
Change = 296 tpy

Annual lbs/hr rate = $296 \text{ tpy} \times 2000 / 8760 \text{ hr/yr} = 67.6 \text{ lbs/hr}$ total or 22.5 lbs/hr each boiler. Using this input to the ISCST model provides the 1 ug/m³ impact area for the increase in NO2 emissions. The only source emissions increases within the impact area besides the boilers is the addition of an asphalt hot mix plant to the south of the boilers about ½ mile. This emission source is operated only as needed for paving jobs. Emissions for the past two years were reviewed for determining emissions estimates for annual and hourly inputs to the ISCST model. Based upon the results the hot mix plant has no significant impact on the maximum areas of impact by the TPL Boilers.

Existing ambient NO2 before the boiler change and the hot mix plant is estimated: Boilers emissions = 250 tpy/297 tpy increase $\times 6.36 \text{ ug/m}^3 = 5.4 \text{ ug/m}^3$ background NO2 levels. This is due to the fact that the Scotia area has very few sources of NO2 and the boilers have the most impact on the maximum location of impact.

Hourly/Eight Hour Rates: Maximum rates were used for each boiler at maximum operating allowances.

NO2

Boilers A & B - $0.26 \text{ lbs/mmBtu} \times 194 \text{ mmBtu} = 50 \text{ lbs/hr}$
Boiler C - $0.30 \text{ lbs/mmBtu} \times 194 \text{ mmBtu} = 58 \text{ lbs/hr}$
Hot Mix - 6 lbs/hr

CO

Boilers A & B - $3.0 \text{ lbs/mmBtu} \times 194 \text{ mmBtu} = 582 \text{ lbs/hr}$
Boiler C - $1.5 \text{ lbs/mmBtu} \times 194 \text{ mmBtu} = 291 \text{ lbs/hr}$
Hot Mix - 1.5 lbs/hr

OLM Conversion of NO to NO2 for impact analysis.

Ozone concentrations from monitoring data for the Rohnerville Airport located about 6 miles to the NNE of Scotia were used in order to provide realistic NO conversion to NO2 concentrations. The modeling data which represents 100% NOx(as NO2) was adjusted for this as follows:

$$\text{NO}_2 = 0.1(\text{NO}_x) + \text{MIN}\{(0.9 \times \text{NO}_x) \text{ or } (46/48) \times \text{O}_3\}$$

If the predicted $(0.9 \times \text{NO}_x)$ concentration is less than the $(46/48 \times \text{O}_3)$ concentration, then the minimum NOx concentration plus the 10% NOx impact is used for analysis of impacts. In all other cases where the NOx is greater than the O3, the minimum equivalent O3 is used for analysis.

Ozone data reviewed showed a high hourly concentration of 0.054 ppm which converted equals 106 ug/m³. The mole weight ratio of ozone to NO₂ is 46/48 x 106 = 102 ug/m³. This is the highest hourly NO concentrations which may be oxidized into NO₂ by ozone. For annual impact analysis, the annual ozone concentration was 0.019 ppm which is equivalent to 37 ug/m³. The equivalent NO₂ conversion is 46/48 x 37 = 35 ug/m³. Since all annual concentrations were less than this 35 ug/m³ equivalent all NO is converted to NO₂ for analysis.

FPC & TPL T5 Permit Revision

DRAFT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

July 5, 2000

Wayne Morgan
Air Pollution Control Officer
North Coast Unified AQMD
2300 Myrtle Avenue
Eureka, CA 95501

Dear Mr. Morgan:

Thank you for the opportunity to comment on the proposed title V and Prevention of Significant Deterioration (PSD) permit modifications for Pacific Lumber Co. and Fairhaven Power Co, which were received by EPA on May 31, 2000. In accordance with 40 CFR §70.8(c), and the North Coast Unified AQMD Rule 540(d), the EPA has reviewed the proposed modifications during our 45-day review period.

Based on the combination of fuel with a high moisture content and the recent availability of continuous emission monitoring data, we agree that there is sufficient justification for changing the emission limits for carbon monoxide (CO) and nitrogen oxides (NOx). We concur with the District's tiered, seasonal approach to the emission limits, which we believe is an appropriate response to the compliance problems at the two facilities.

Although the permit modifications do not address quality assurance procedures, we would like to suggest that the District make the requirement for an annual Relative Accuracy Test Audit (RATA) for NOx and CO an explicit condition in the permits. EPA's policy is that any continuous emissions monitors (CEMS) used to verify compliance with Best Available Control Technology emission limit should undergo an annual RATA. While the final title V permits issued to these sources do require compliance with 40 CFR 60, Appendix F, we believe this high level reference may not be sufficient to clarify the sources' responsibility.

If you have any questions, please do not hesitate to contact Roger Kohn of my staff at 415-744-1238.

Sincerely,

A handwritten signature in black ink, appearing to read "D. J. A.", with a stylized flourish at the end.

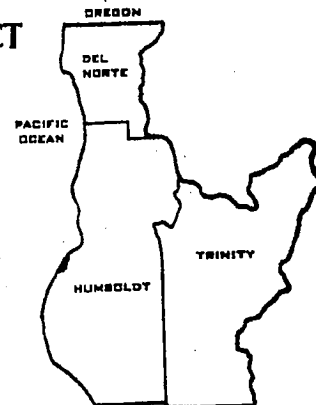
for Matt Haber
Chief, Permits Office
Air Division

cc: Ray Menebroker, ARB
John Campbell, Pacific Lumber Co.
Ron Auzenne, Fairhaven Power Co.

NORTH COAST UNIFIED AIR QUALITY MANAGEMENT DISTRICT

2300 Myrtle Avenue, Eureka, CA 95501

Phone (707) 443-3093 Fax (707) 443-3099



**BEFORE THE HEARING BOARD
OF THE
NORTH COAST UNIFIED AIR QUALITY MANAGEMENT DISTRICT**

NOTICE IS HEREBY GIVEN that the North Coast Unified Air Quality Management District Hearing Board has scheduled a public hearing at 09:30 am on June 2, 1999. Said hearing is to be held at the City of Eureka Council Chambers, 531 K Street, Eureka, CA, to consider the application for a Regular (1 year) variance submitted by the following facilities

Ultrapower III.
Fairhaven Power Company
The Pacific Lumber Company

Blue Lake, CA
Fairhaven, CA
Scotia, CA

The applicants request a variance from the requirements of Section III. B & C, carbon monoxide and nitrogen oxides emissions limits, contained in the facilities respective Title V permits, for their wood fired boilers. This condition states that the permittees are required to install new continuous emissions monitoring equipment which may detect excess emissions over the current permitted limits. Data will be gathered to determine if new limits are necessary. Said hearing shall be conducted in accordance with the provisions of Division 26, Part 3, Chapter 8 and Part 4, Chapter 4 of the Health and Safety Code of the State of California.

The variance applications are available for review at the North Coast Unified Air Quality Management District Office 2300 Myrtle, Eureka, CA 95501, (707) 443-3093, or at the District's Web site address www.northcoast.com/~ncuaqmd.

Debra Harris

Debra Harris
Clerk of the Hearing Board

4-23-99

Date

**BEFORE THE HEARING BOARD
OF THE
NORTH COAST UNIFIED AIR QUALITY MANAGEMENT DISTRICT**

**IN THE MATTER OF THE PETITION FOR
A REGULAR VARIANCE BY THE PACIFIC
LUMBER COMPANY, SCOTIA & FAIRHAVEN
POWER COMPANY, FAIRHAVEN &
ULTRAPOWER III, BLUE LAKE,
PETITIONERS**

**) No. 99-2
)
) CONFIRMATION OF FINDINGS
) AND DECISION RE: REGULAR
) VARIANCE - CO AND NOX
) TITLE V PERMIT CONDITIONS**

Pursuant to Health and Safety Code Section 42350 and Rule 616 of the North Coast Unified Air Quality Management District the above named Petitioner came before the Hearing Board of the North Coast Unified Air Quality Management District on June 2, 1999, to obtain a Regular Variance. The Petitioners were represented by Robert Clark, District Engineer. Supporting testimony was given by Michael Green, Power Plant Superintendent and John Prevost, Director of Environmental Services, Pacific Lumber, Ron Azunne, Power Plant Manager, Fairhaven. There was no representative from Ultrapower III. The District was represented by Robert Clark, District Engineer, and Debra Harris, Clerk of the Hearing Board.

Three applications submitted by the District on behalf of the three Petitioner's, requesting a Regular Variance were made Exhibit A1, A2 and A3 to the record. The Public Notice that was provided to the Air Basin, ARB EPA and interested members of the public a full 30 days prior to the hearing was made Exhibit B. The Staff report consisting of nine pages of text, 1 example of permit conditions labeled A with two schematics, 1 copy of a Permit for Fairhaven Power Company labeled B, A copy of a 1995 Variance 95-5 labeled C, and a table entitled Northern California Wood Fired Boiler Gaseous Permit Limit Comparison labeled D was made Exhibit C to the record.

After receiving evidence and testimony, a decision was made as follows:

**AIR QUALITY HEARING ORDER
FACTUAL FINDINGS**

1. Petitioners Ultrapower III ("ULTRA"), Fairhaven Power Company ("FPC"), and Pacific Lumber Company ("PLC") each operate wood fired boilers in Blue Lake, Fairhaven and Scotia, respectively.
2. Each petitioner is regulated for carbon monoxide (CO) and nitrogen oxides (NOx) gaseous emissions by conditions attached to its respective Authority to Construct/Permit to Operate, Rule 240(d), Regulation 1 of the North Coast Unified Air Quality Management District ("District"), where limitations are based on three hour averages.
3. Effective July 1, 1999, each petitioner will be required to install and operate continuous emissions monitoring ("CEM") equipment for the CO and NOx emissions. This requirement was placed into the Federal Title V permits for the facilities to satisfy periodic monitoring requirements.

4. Past emissions testing from the wood fired boilers consisted of routine observations made every year or more, and was normally based on observations made over a few hours of operation.
5. In 1995 and 1996, pursuant to District Variance 95-5, the District conducted longer term testing on the boilers at ULTRA and FPC and found that compliance with the existing standards, particularly over the required three hour average, was rarely achieved.
6. The existing standards were established in the 1980's and were based on Best Available Control Technology ("BACT"). This technology consists of combustion air systems. Since that time, FPC has upgraded its combustion air system.
7. Changes in the wood products industry during the 1990's has resulted in changes in the type and quality of wood fuel utilized by the boilers. Previously, the wood fired boilers were able to burn dryer and higher amounts of wood. Today, fuel composition consists primarily of redwood bark and sawdust. These types of fuels do not burn as efficiently.
8. For FPC, testing in 1995 and 1996 revealed average hourly highs of CO and NOx emissions at 2.59 and 0.19 lbs/million BTU heat input, respectively, for dry weather testing, and 3.63 and 0.14 lbs/million BTU heat input, respectively for wet weather testing. The emissions limitation for CO is 0.6 lbs/million BTU heat input and for NOx is 0.15 lbs/million BTU heat input, three hour averages. (what is the emission limit for NOx?)
9. For ULTRA, testing during the 1995 dry weather season revealed average hourly highs for CO and NOx of 1.86 and 0.18 lbs/million BTU heat input, respectively. Wet weather testing found 2.42 and 0.17 lbs/million BTU heat input, respectively. The emission limitation for CO at this boiler is 1.0 lbs/million BTU heat input, and for NOx is 0.15 lbs/million BTU heat input, three hour averages.
10. PLC has three wood-fired boilers (Boilers A, B and C). Boiler C already contains CEM equipment. The emissions limits for these boilers are 0.6 lbs/million BTU heat input for CO and 0.15 for NOx. Periodically, PLC has exceeded the limit for CO. CEM data from Boiler C indicate that compliance with a three hour average limitation is difficult to achieve in wet weather.
11. The District believes that the three hour averages incorporated into the emissions standards will be difficult to achieve on a continuous basis. Specifically, the District believes that past compliance testing based on batch source testing has been unable to measure overall compliance. The availability of CEM data is expected to reveal the technological legitimacy of incorporating three hour averages into the emissions standards.
12. The actual amount of gaseous emissions will not change as a result of the CEM equipment.

STATUTORY FINDINGS

1. Petitioner is, or will be, in violation of Section 41701 or of any rule, regulation, or order of the District: Past testing has indicated that achieving three hour averages in compliance with the emissions limitations will be difficult. Petitioners are expected to be in violation of Rule 240(d), Regulation 1 of the District concerning emissions limitations for CO and NOx, when monitored continuously through the installation of CEM equipment by July 1, 1999.
2. Due to conditions beyond the reasonable control of the petitioner, requiring compliance would result in either (A) an arbitrary or unreasonable taking of property, or (B) the practical closing and elimination of a lawful business: Petitioners have each exercised cooperation and diligence in installing the CEM equipment in compliance with their respective Title V permits. Similarly, over the past 10 - 15 years, each petitioner has exercised cooperation with District in attempting to achieve compliance with the existing three hour average standards for Co and NOx. Each has attempted to adjust air combustion properties of the boilers and to burn higher quality wood waste. That the CEM data may reveal continuous compliance is impossible is a condition outside the reasonable control of petitioners.
3. The closing or taking would be without a corresponding benefit in reducing air contaminants: There would be no increase to overall emissions as a result of this variance. Accordingly, a closing of each of the boilers would be without a corresponding benefit in reducing air contaminants.
4. The applicant for the variance has given consideration to curtailing operations of the source in lieu of obtaining a variance: The wood fired boilers are used to produce electricity which is then sold for public use. PLC additionally generates steam from its wood fired boilers for use in its sawmill, and provides electricity to the town of Scotia. ULTRA and FPC are each stand alone operations that might be forced to shut down if compliance were required immediately. Additionally, the District believes that curtailment of operations (or shut down) would prevent it from obtaining the data necessary to determine if demanding compliance is reasonable. Accordingly, curtailment of operations in lieu of obtaining a variance would frustrate the District's goal. Moreover, it is not clear that curtailment of operations would actually result in compliance.
5. During the period the variance is in effect, the applicant will reduce excess emissions to the maximum extent feasible: The District will monitor the facilities and their boiler firing practices to ensure that the combustion air systems are being fired in a manner that produces the lowest emissions of both CO and NOx. The District expects the CEM data to provide an efficient method of determining the correlation between specific operating conditions and emissions, with the result that excess emissions should be readily reduced to the greatest extent possible.

6. During the period the variance is in effect, that the applicant will monitor or otherwise quantify emission levels from the source, if requested to do so by the District, and report these emission levels to the District pursuant to a schedule established by the District. The facilities as required by permit conditions and the terms of this variance order will supply the District with information that will enable the District to ascertain compliance with limits as well as determine potential changes to limits.

ORDER

Based on the above findings, Petitioners are granted a variance commencing on July 1, 1999 for a period of one year and ending on July 1, 2000, from North Coast Unified Air Quality Management District requirements of Section III. B & C, carbon monoxide and nitrogen oxides emissions limits, contained in the facilities respective Title V permits for their wood fired boilers, as follows:

1. FPC, ULTRA, and PLC shall utilize the CEM emissions information to optimize boiler operation and maintain carbon monoxide and nitrogen oxides emissions levels at the lowest possible levels within the constraints of the existing combustion air systems and fuel characteristics.
2. Between July 1, 1999 and March 31, 2000, Fairhaven Power Company, Ultrapower III, and The Pacific Lumber Company shall conduct orderly tests involving the combustion air settings and the results achieved in reducing and maintaining emissions to the lowest possible levels. The results of this testing shall be provided to the District on a monthly basis.
3. Between July 1, 1999 and March 31, 2000, FPC, ULTRA, and PLC shall provide, on a monthly basis, the District with daily hourly average emissions and fuel moisture information.
4. FPC, ULTRA, and PLC shall have Relative Accuracy Test Audits (RATA) performed on their CEMS before the July 1, 1999 on-line date. The District has the right to provide an extension to this time frame if necessary due to testing constraints, CEM installation problems, or startup problems which would not allow for pre July 1, certification.
5. FPC, ULTRA, AND PLC shall each perform an analysis of the availability of equipment and or technology upgrades to ascertain if appropriate improvements could be made that would result in achieving compliance with the three hour averages. Such analyses shall be provided to the District prior to the end of the variance.
6. All monthly reports required in this order shall be submitted to the District on or before the 15th day of the month following the testing.

A violation of these conditions shall result in an automatic cancellation of this variance and subject the source to noncompliance penalties for continued operations.

**The Hearing Board of the
North Coast Unified Air
Quality Management District**

By: Nancy Diamond
Hearing Board Member

Date: 10 June 1999

Attest: Debra Harris
Clerk of the Hearing Board

Date: 10 June 1999

WFB0ilers9-2

DRAFT

Emission Calculations

Table 4.1 – NO_x, Boiler

Table 4.2 – Criteria Pollutants, Boiler

Table 4.3 – HAPs, Boiler

Table 4.4 – Propane Combustion, Boiler

Table 4.5 – Greenhouse Gas, Boiler

Table 4.6 – Boiler Emergency Feed-water Pump

Table 4.7 – Emergency Generator

Figure 4.1 – Screen3, CO

Figure 4.2 – Screen3, NO_x

TABLE 4.1.1 - NO_x, BOILER**Current Permit**

PSD review was triggered when the facility was constructed. A BACT limit of 0.15 lbs/MMBtu was established and compliance was to be determined on a 3 hr. average. The annual emissions were calculated assuming 8,760 hours of operation per year. The current permit doesn't include mass emission limits (lb/hr or tpy) for NO_x. The shaded areas are permit limits. Assumptions - the highest lb/MMBtu emission rate occurs when the unit is firing at maximum rated capacity.

Boiler

185 MMBtu/hr	730 hrs/month
24 hrs/day	8,760.00 hrs/yr

(lbs/MMBtu)	3 hr Average (lbs/hr)	Max (lbs/hr)	(lbs/day)	(tons/day)	Average (tons/month)	(tpy)
0.15	27.75	83.25	666	0.33	10.13	121.55

Proposed Permit

Modification to the method used to determine compliance with the BACT limit is proposed. A change in the averaging period from 3 hrs to 24 hrs has been requested. The maximum allowable mass emission rate per hour, per day, and per year will remain the same. In addition to the BACT limit, mass emission limits will also be imposed on the revised permit.

Actual Emissions

Emissions	Monthly Average (lbs/MMBtu)	3 hr Average (lbs/hr)	Max (lbs/hr)	Max (lbs/day)	Max (tons/day)	Average (tons/month)	(tpy)
Current	0.15	27.75	83.25	666.00	0.33	10.13	121.55
Proposed	0.15	-	83.25	666.00	0.33	10.13	121.55
Change	0.00	-	0.00	0.00	0.00	0.00	0.00

Allowable Emissions - Permit Limits

Permit	0.15 lbs/MMBtu	3 hr Average (lbs/hr)	Max (lbs/hr)	Max (lbs/day)	Max (tons/day)	Average (tons/month)	(tpy)
Current	3 hr average	-	-	-	-	-	-
Proposed	24 hr average	-	83.3	-	-	-	121.5

TABLE 4.1.2 - CO, BOILER**Current Permit**

PSD review was triggered when the facility was constructed. A BACT limit of 1.0 lbs/MMBtu was established and compliance was to be determined on a 3 hr. average. The annual emissions were calculated assuming 8,760 hours of operation per year. The current permit doesn't include mass emission limits (lb/hr or tpy) for NOx. The shaded areas are permit limits. Assumptions - the highest lb/MMBtu emission rate occurs when the unit is firing at maximum rated capacity.

Boiler

185 MMBtu/hr	730 hrs/month
24 hrs/day	8,760.00 hrs/yr

(lbs/MMBtu)	3 hr Average (lbs/hr)	Max (lbs/hr)	(lbs/day)	(tons/day)	Average (tons/month)	(tpy)
1.00	185	555	4,440.00	2.22	67.53	810.30

Proposed Permit

Modification to the method used to determine compliance with the BACT limit is proposed. A change in the averaging period from 3 hrs to 24 hrs has been requested. The maximum allowable mass emission rate per hour, per day, and per year will remain the same. In addition to the BACT limit, mass emission limits will also be imposed on the revised permit.

Actual Emissions

Emissions	Monthly Average (lbs/MMBtu)	3 hr Average (lbs/hr)	Max (lbs/hr)	Max (lbs/day)	Max (tons/day)	Average (tons/month)	(tpy)
Current	1.00	185	555.00	4,440.00	2.22	67.53	810.30
Proposed	1.00	-	555.00	4,440.00	2.22	67.53	810.30
Change	0.00	-	0.00	0.00	0.00	0.00	0.00

Allowable Emissions - Permit Limits

Permit	0.15 lbs/MMBtu	3 hr Average (lbs/hr)	Max (lbs/hr)	Max (lbs/day)	Max (tons/day)	Average (tons/month)	(tpy)
Current	3 hr average	-	-	-	-	-	-
Proposed	24 hr average	-	555.0	-	-	-	810.3

TABLE 4.2 - CRITERIA POLLUTANTS, BOILER**Current Permit**

PSD review was triggered when the facility was constructed. A BACT limit of 1 lb/MMBtu on a 3 hr. average was established. The annual emissions were calculated assuming 8,760 hours of operation per year. The current permit doesn't include mass emission limits (lb/hr or tpy) for any of the criteria or regulated pollutants.

Boiler

185 MMBtu/hr	730 hrs/month
24 hrs/day	8,760 hrs/yr

Actual Emissions

Pollutant	E-factor Source	(lbs/MMBtu)	24 hr Average (lbs/hr)	(lbs/hr)	(lbs/day)	(tons/day)	Average (tons/month)	(tpy)
CO	BACT Limit	1.00	185.00	555.00	4,440.00	2.22	67.53	810.30
NOx	BACT Limit	0.15	27.75	83.25	666.00	0.33	10.13	121.55
PM2.5	BACT Limit	0.04	7.40	22.20	177.60	0.09	2.70	32.41
PM10	BACT Limit	0.04	7.40	22.20	177.60	0.09	2.70	32.41
VOC	AP-42	0.03	4.63	13.88	111.00	0.06	1.69	20.26
SOx	AP-42	0.02	3.15	9.44	75.48	0.04	1.15	13.78

Proposed Permit

Mass emission limits are proposed to be established. The limits will be equal to the unit operating at the maximum heat input capacity while emitting no more than either the BACT limit or the e-factor over the time interval specified.

Allowable Emissions - Permit Limits

Pollutant	Permit	1 hr Average	3 hr Average	24 hr Average (lbs/MMBtu)	(lbs/hr)	(lbs/day)	(tons/day)	(tons/month)	(tpy)
CO	Current	-	1.00	-	-	-	-	-	-
	Proposed	-	-	1.00	555.0	-	-	-	810.3
NOx	Current	-	0.15	-	-	-	-	-	-
	Proposed	-	-	0.15	83.3	-	-	-	121.5
PM2.5	Current	-	-	-	-	-	-	-	-
	Proposed	0.04	-	-	22.2	-	-	-	32.4
PM10	Current	0.04	-	-	-	-	-	-	-
	Proposed	0.04	-	-	22.2	-	-	-	32.4
VOC	Current	-	-	-	-	-	-	-	-
	Proposed	-	-	-	13.9	-	-	-	20.3
SOx	Current	-	-	-	-	-	-	-	-
	Proposed	-	-	-	9.4	-	-	-	13.8

TABLE 4.3 - HAPs, BOILER

Boiler Rating	185	MMBtu/hr	Maximum	Maximum
Operating Hours	8,760.00	hrs	Wood Firing Rate	Steam Production
Wood HHV	8,500.00	Btu/lb	10.88 (tons/hr)	105,000.00 (lbs/hr)
Wood LHV	4,500.00	Btu/lb	95,329.41 (tons/yr)	919.80 (million lbs/yr)

CAS	Pollutant	Units lb/MMBtu	E-Factor Reference	Uncontrolled lb/ton	Control Efficiency	Actual lb/ton	Controlled lb/hr	lb/yr	tpy
75-07-0	ACETALDEHYDE	8.3E-04	AP-42	0.01411	0	0.01411	0.15355	1,345.10	0.67
60-35-5	ACETAMIDE	X							
75-05-8	ACETONITRILE	X							
98-86-2	ACETOPHENONE	3.2E-09	AP-42	5.44E-08	0	5.44E-08	0.000000592	0.01	0.00
53-96-3	2-ACETYLAMINOFLUORENE	X							
107-02-8	ACROLEIN	4.0E-03	AP-42	0.068	0	0.068	0.74	6,482.40	3.24
79-06-1	ACRYLAMIDE	X							
79-10-7	ACRYLIC ACID	X							
107-13-1	ACRYLONITRILE	X							
107-05-1	ALLYL CHLORIDE	X							
92-67-1	4-AMINOBIIPHENYL	X							
62-53-3	ANILINE	X							
7440-36-0	ANTIMONY	7.9E-06	AP-42	0.0001343	98	2.686E-06	0.00002923	0.26	0.00
ADQ500	ANTIMONY COMPOUNDS	X							
7440-38-2	ARSENIC	2.2E-05	AP-42	0.000374	98	0.00000748	0.0000814	0.71	0.00
1332-21-4	ASBESTOS (FRIABLE)	X							
71-43-2	BENZENE	2.0E-03	WA	0.034	0	0.034	0.37	3,241.20	1.62
92-87-5	BENZIDINE	X							
98-07-7	BENZOIC TRICHLORIDE	X							
100-44-7	BENZYL CHLORIDE	X							
7440-41-7	BERYLLIUM	1.1E-06	AP-42	0.0000187	98	3.74E-07	0.00000407	0.04	0.00
BFQ500	BERYLLIUM COMPOUNDS	X							
57-57-8	BETA-PROIOLACTONE	X							
92-52-4	BIPHENYL	X							
119-93-7	(1,1'-BIPHENYL)-4,4'-DIAMINE, 3,3'-DI	X							
111-44-4	BIS(2-CHLOROETHYL) ETHER	X							
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	4.7E-08	AP-42	0.000000799	0	7.99E-07	0.000008695	0.08	0.00
542-88-1	BIS(CHLOROMETHYL) ETHER	X							
106-99-0	1,3-BUTADIENE	X							
106-88-7	1,2-BUTYLENE OXIDE	X							
7440-43-9	CADMIUM	4.1E-06	AP-42	0.0000697	98	1.394E-06	0.00001517	0.13	0.00
CAE750	CADMIUM COMPOUNDS	X							
156-62-7	CALCIUM CYANAMIDE	X							
8001-35-2	CAMPHECHLOR	X							
133-06-2	CAPTAN	X							
63-25-2	CARBARYL	X							
75-15-0	CARBON DISULFIDE	1.3E-04	NCASI	0.00221	98	0.0000442	0.000481	4.21	0.00
56-23-5	CARBON TETRACHLORIDE	4.5E-05	AP-42	0.000765	0	0.000765	0.008325	72.93	0.04
463-58-1	CARBONYL SULFIDE	X							
120-80-9	CATECHOL	X							
126-99-8	2-CHLOR-1,3-BUTADIENE	X							
133-90-4	CHLORAMBEN	X							
57-74-9	CHLORDANE	X							
7782-50-5	CHLORINE	7.9E-04	AP-42	0.01343	0	0.01343	0.14615	1,280.27	0.64
79-11-8	CHLOROACETIC ACID	X							
532-27-4	2-CHLOROACETOPHENONE	X							
108-90-7	CHLOROBENZENE	3.3E-05	AP-42	0.000561	0	0.000561	0.006105	53.48	0.03
510-15-6	CHLOROBENZILATE	X							
75-00-3	CHLOROETHANE	X							
67-66-3	CHLOROFORM	2.8E-05	AP-42	0.000476	0	0.000476	0.00518	45.38	0.02
74-87-3	CHLOROMETHANE (methyl chloride)	2.3E-05	AP-42	0.000391	0	0.000391	0.004255	37.27	0.02
107-30-2	CHLOROMETHYL METHYL ETHER	2.3E-05	AP-42	0.000391	0	0.000391	0.004255	37.27	0.02
7440-47-3	CHROMIUM	2.1E-05	AP-42	0.000357	98	0.00000714	0.0000777	0.68	0.00
CMJ500	CHROMIUM COMPOUNDS (CH6)	3.5E-06	AP-42	0.0000595	98	0.00000119	0.00001295	0.11	0.00
7440-48-4	COBALT	6.5E-06	AP-42	0.0001105	98	0.00000221	0.00002405	0.21	0.00
CNB850	COBALT COMPOUNDS	X							
1066	COKE OVEN EMISSIONS	X							
1319-77-3	CRESOL (MIXED ISOMERS)	X							
98-82-8	CUMENE	1.8E-05	NCASI	0.000306	0	0.000306	0.00333	29.17	0.01
1073	CYANIDE COMPOUNDS	X							
94-75-7	2,4-D	X							
72-55-9	DDE	X							
95-80-7	2,4-DIAMINOTOLUENE	X							
334-88-3	DIAZOMETHANE	X							

132-64-9	DIBENZOFURANS ^c	1.7E-09	AP-42	2.89E-08	0	2.89E-08	3.145E-07	0.00	0.00
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE (DI	X							
106-93-4	1,2-DIBROMOETHANE	X							
84-74-2	DIBUTYL PHTHALATE	3.3E-05	NCASI	0.000561	0	0.000561	0.006105	53.48	0.03
106-46-7	1,4-DICHLOROBENZENE	X							
91-94-1	3,3'-DICHLOROBENZIDINE	X							
75-34-3	1,1-DICHLOROETHANE	X							
107-06-2	1,2-DICHLOROETHANE (ethylene dichl	2.9E-05	AP-42	0.000493	0	0.000493	0.005365	47.00	0.02
75-35-4	1,1-DICHLOROETHYLENE	X							
75-09-2	DICHLOROMETHANE (methylene chlor	2.9E-04	AP-42	0.00493	0	0.00493	0.05365	469.97	0.23
78-87-5	1,2-DICHLOROPROPANE (propylene di	3.3E-05	AP-42	0.000561	0	0.000561	0.006105	53.48	0.03
542-75-6	1,3-DICHLOROPROPENE (MIXED ISOM	X							
62-73-7	DICHLORVOS	X							
111-42-2	DIETHANOLAMINE	X							
64-67-5	DIETHYL SULFATE	X							
119-90-4	3,3'-DIMETHOXYBENZIDINE	X							
57-14-7	1,1-DIMETHYL HYDRAZINE	X							
131-11-3	DIMETHYL PHTHALATE	X							
77-78-1	DIMETHYL SULFATE	X							
60-11-7	4-DIMETHYLAMINOAZOBENZENE	X							
79-44-7	DIMETHYLCARBAMOYL CHLORIDE	X							
534-52-1	4,6-DINITRO-O-CRESOL	X							
51-28-5	2,4-DINITROPHENOL	1.8E-07	AP-42	0.00000306	0	0.00000306	0.0000333	0.29	0.00
121-14-2	2,4-DINITROTOLUENE	9.4E-07	NCASI	0.00001598	0	0.00001598	0.0001739	1.52	0.00
123-91-1	1,4-DIOXANE	X							
122-66-7	1,2-DIPHENYLHYDRAZINE	X							
106-89-8	EPICHLOROHYDRIN	X							
140-88-5	ETHYL ACRYLATE	X							
100-41-4	ETHYLBENZENE	3.1E-05	AP-42	0.000527	0	0.000527	0.005735	50.24	0.03
107-21-1	ETHYLENE GLYCOL	X							
110-80-5	ETHYLENE GLYCOL MONOETHYL ETHER	X							
109-86-4	ETHYLENE GLYCOL MONOMETHYL ETHER	X							
75-21-8	ETHYLENE OXIDE	X							
96-45-7	ETHYLENE THIOUREA	X							
151-56-4	ETHYLENEIMINE	X							
50-00-0	FORMALDEHYDE	2.1E-03	WA	0.0357	0	0.0357	0.3885	3,403.26	1.70
58-89-9	GAMMA-LINDANE	X							
EDF-109	GLYCOL ETHERS	X							
76-44-8	HEPTACHLOR	X							
87-68-3	HEXACHLORO-1,3-BUTADIENE	X							
118-74-1	HEXACHLOROBENZENE	1.0E-06	NCASI	0.000017	0	0.000017	0.000185	1.62	0.00
77-47-4	HEXACHLOROCYCLOPENTADIENE	X							
67-72-1	HEXACHLOROETHANE	X							
822-06-0	HEXAMETHYLENE-1,6-DIISOCYANATE	X							
680-31-9	HEXAMETHYLPHOSPHORAMIDE	X							
302-01-2	HYDRAZINE	X							
7647-01-0	HYDROCHLORIC ACID (hydrogen chlor	3.8E-03	CATEF	0.065195	0	0.065195	0.709475	6,215.00	3.11
7664-39-3	HYDROFLUORIC ACID	X							
74-90-8	HYDROGEN CYANIDE	X							
123-31-9	HYDROQUINONE	X							
EDF-222	INORGANIC ARSENIC COMPOUNDS	X							
78-59-1	ISOPHORONE	X							
7439-92-1	LEAD	4.8E-05	AP-42	0.000816	98	0.00001632	0.0001776	1.56	0.00
LCT000	LEAD COMPOUNDS	X							
108-39-4	M-CRESOL	X							
108-38-3	M-XYLENE	X							
108-31-6	MALEIC ANHYDRIDE	X							
7439-96-5	MANGANESE	1.6E-03	AP-42	0.0272	98	0.000544	0.00592	51.86	0.03
MAR500	MANGANESE COMPOUNDS	X							
7439-97-6	MERCURY	3.5E-06	AP-42	0.0000595	98	0.00000119	0.00001295	0.11	0.00
EDF-033	MERCURY COMPOUNDS	X							
62-75-9	METHANAMINE, N-METHYL-N-NITROS	X							
67-56-1	METHANOL	8.3E-04	NCASI	0.01411	0	0.01411	0.15355	1,345.10	0.67
72-43-5	METHOXYCHLOR	X							
74-83-9	METHYL BROMIDE (bromomethane)	1.5E-05	AP-42	0.000255	0	0.000255	0.002775	24.31	0.01
78-93-3	METHYL ETHYL KETONE (2-Butanone)	5.4E-06	AP-42	0.0000918	0	0.0000918	0.000999	8.75	0.00
60-34-4	METHYL HYDRAZINE	X							
74-88-4	METHYL IODIDE	X							
108-10-1	METHYL ISOBUTYL KETONE	2.3E-05	NCASI	0.000391	0	0.000391	0.004255	37.27	0.02
624-83-9	METHYL ISOCYANATE	X							
80-62-6	METHYL METHACRYLATE	X							
1634-04-4	METHYL TERT-BUTYL ETHER	X							
101-14-4	4,4'-METHYLENEBIS(2-CHLOROANILINI	X							

101-68-8	1,1'-METHYLENEBIS(4-ISOCYANATOBE	X								
101-77-9	4,4'-METHYLENEDIANILINE	X								
1136	MINERAL FIBERS	X								
121-69-7	N,N-DIMETHYLANILINE	X								
68-12-2	N,N-DIMETHYLFORMAMIDE	X								
110-54-3	N-HEXANE	2.9E-04	NCASI	0.00493	0	0.00493	0.05365	469.97	0.23	
684-93-5	N-NITROSO-N-METHYLUREA	X								
59-89-2	N-NITROSOMORPHOLINE	X								
91-20-3	NAPHTHALENE	9.7E-05	AP-42	0.001649	0	0.001649	0.017945	157.20	0.08	
7440-02-0	NICKEL	3.3E-05	AP-42	0.000561	98	0.00001122	0.0001221	1.07	0.00	
NDB000	NICKEL COMPOUNDS	X								
98-95-3	NITROBENZENE	X								
92-93-3	4-NITROBIPHENYL	X								
100-02-7	4-NITROPHENOL	1.1E-07	AP-42	0.00000187	0	0.00000187	0.00002035	0.18	0.00	
79-46-9	2-NITROPROPANE	X								
90-04-0	O-ANISIDINE	X								
95-48-7	O-CRESOL	X								
95-53-4	O-TOLUIDINE	X								
95-47-6	O-XYLENE	2.5E-05	AP-42	0.000425	0	0.000425	0.004625	40.52	0.02	
106-44-5	P-CRESOL	X								
106-50-3	P-PHENYLENEDIAMINE	X								
106-42-3	P-XYLENE	X								
56-38-2	PARATHION	X								
87-86-5	PENTACHLOROPHENOL	5.1E-08	AP-42	0.000000867	0	8.67E-07	0.000009435	0.08	0.00	
108-95-2	PHENOL	5.1E-05	AP-42	0.000867	0	0.000867	0.009435	82.65	0.04	
75-44-5	PHOSGENE	X								
7803-51-2	PHOSPHINE	X								
PHQ000	PHOSPHORUS COMPOUNDS	2.7E-05	AP-42	0.000459	98	0.00000918	0.0000999	0.88	0.00	
85-44-9	PHTHALIC ANHYDRIDE	X								
1336-36-3	POLYCHLORINATED BIPHENYLS ^b	7.9E-09	AP-42	1.343E-07	0	1.343E-07	1.4615E-06	0.01	0.00	
EDF-047	POLYCYCLIC ORGANIC MATTER (POM) ^c	1.2E-04	AP-42	0.002091	0	0.002091	0.022755	199.33	0.10	
1120-71-4	PROPANE SULTONE	X								
123-38-6	PROPIONALDEHYDE	6.1E-05	AP-42	0.001037	0	0.001037	0.011285	98.86	0.05	
114-26-1	PROPOXUR	X								
75-56-9	PROPYLENE OXIDE	X								
75-55-8	PROPYLENEIMINE	X								
91-22-5	QUINOLINE	X								
106-51-4	QUINONE	X								
82-68-8	QUINTOZENE	X								
1165	RADIONUCLIDES	X								
7782-49-2	SELENIUM	2.8E-06	AP-42	0.0000476	98	9.52E-07	0.00001036	0.09	0.00	
SBP500	SELENIUM COMPOUNDS	X								
100-42-5	STYRENE	1.9E-03	AP-42	0.0323	0	0.0323	0.3515	3,079.14	1.54	
96-09-3	STYRENE OXIDE	X								
1746-01-6	2,3,7,8-TETRACHLORODIBENZO-P-DIO	8.6E-12	AP-42	1.462E-10	0	1.462E-10	1.591E-09	0.00	0.00	
79-34-5	1,1,2,2-TETRACHLOROETHANE	X								
127-18-4	TETRACHLOROETHYLENE (perchloroet	3.8E-05	AP-42	0.000646	0	0.000646	0.00703	61.58	0.03	
7550-45-0	TITANIUM TETRACHLORIDE	X								
108-88-3	TOLUENE	9.2E-04	AP-42	0.01564	0	0.01564	0.1702	1,490.95	0.75	
584-84-9	TOLUENE-2,4-DIISOCYANATE	X								
10061-02-6	TRANS-1,3-DICHLOROPROPENE	X								
75-25-2	TRIBROMOMETHANE	X								
120-82-1	1,2,4-TRICHLOROBENZENE	5.5E-05	NCASI	0.000935	0	0.000935	0.010175	89.13	0.04	
71-55-6	1,1,1-TRICHLOROETHANE	3.1E-05	AP-42	0.000527	0	0.000527	0.005735	50.24	0.03	
79-00-5	1,1,2-TRICHLOROETHANE	1.2E-04	NCASI	0.00204	0	0.00204	0.0222	194.47	0.10	
79-01-6	TRICHLOROETHYLENE	3.0E-05	AP-42	0.00051	0	0.00051	0.00555	48.62	0.02	
88-06-2	2,4,6-TRICHLOROPHENOL	2.2E-08	AP-42	0.000000374	0	3.74E-07	0.00000407	0.04	0.00	
95-95-4	2,4,5-TRICHLOROPHENOL	X								
121-44-8	TRIETHYLAMINE	X								
1582-09-8	TRIFLURALIN	X								
540-84-1	2,2,4-TRIMETHYLPENTANE	X								
51-79-6	URETHANE	X								
108-05-4	VINYL ACETATE	X								
593-60-2	VINYL BROMIDE	X								
75-01-4	VINYL CHLORIDE	1.8E-05	AP-42	0.000306	0	0.000306	0.00333	29.17	0.01	
1330-20-7	XYLENE (MIXED ISOMERS)	6.6E-05	NCASI	0.001122	0	0.001122	0.01221	106.96	0.05	
TOTAL									15.30	

^a Factors from CATEF are the mean values (SCC: 10100903), and have been converted from lbs/ton to lbs/MMBtu

^b Factor for polychlorinated biphenyls is the sum of the speciated factors from AP-42 Table 1.6-3

Decachlorobiphenyl	2.7E-10
Dichlorobiphenyl	7.4E-10
Heptachlorobiphenyl	6.6E-11
Hexachlorobiphenyl	5.5E-10
Pentachlorobiphenyl	1.2E-09
Tetrachlorobiphenyl	2.5E-09
Trichlorobiphenyl	2.6E-09

^c Factor for dibenzofurans is the sum of the speciated factors from AP-42 Table 1.6-3

Heptachlorodibenzofurans, total	2.4E-10
Hexachlorodibenzofurans, total	2.8E-10
Octachlorodibenzofurans, total	8.8E-11
Pentachlorodibenzofurans, total	4.2E-10
Tetrachlorodibenzofurans, total	7.5E-10

^d Factor for POM is the sum of the factors for the following pollutants from AP-42 Table 1.6-3:

2,3,7,8-Tetrachlorodibenzo-p-di	8.6E-12
Acenaphthene	9.1E-07
Acenaphthylene	5.0E-06
Anthracene	3.0E-06
Benzo[a]anthracene	6.5E-08
Benzo[a]pyrene	2.6E-06
Benzo[b]fluoranthene	1.0E-07
Benzo[g,h,i]perylene	9.3E-08
Benzo[k]fluoranthene	3.6E-08
Chrysene	3.8E-08
Dibenzo[a,h]anthracene	9.1E-09
Fluoranthene	1.1E-07
Fluorene	3.4E-06
Indeno[1,2,3-c,d]pyrene	8.7E-08
Naphthalene	9.7E-05
Phenanthrene	7.0E-06
Pyrene	3.7E-06

Factors for benzene and formaldehyde are from WA and assume CO operating range of 500 to 1500 ppm

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TABLE 4.4 - PROPANE COMBUSTION, BOILER

Rating	80.00	(MMBtu/hr)	9.99%	Heat Input Annual Capacity Factor	
Propane GHV	90,500.00	(Btu/gal)	161,897.94	MMBtu/yr	
Propane Use	883.98	(gal/hr)	0.88	(1,000 gal/hr)	Based on rating
Propane Use	21,215.47	(gal/day)	21.22	(1,000 gal/day)	Based on Rating
Propane Use	1,788,927.51	(gal/yr)	1,788.93	(1,000 gal/yr)	Based on Permit

Pollutant	Emission Factor		Emissions			
	Source	(lb/1,000 gal)	(lbs/hr)	(lbs/day)	(lbs/yr)	(tpy)
CO	AP-42 Section 1.6	3.2000	2.82873	67.8895	5,724.57	2.86
NOx	AP-42 Section 1.6	19.0000	16.79558	403.0939	33,989.62	16.99
PM10	AP-42 Section 1.6	0.6000	0.53039	12.7293	1,073.36	0.54
SOx	AP-42 Section 1.6	0.0180	0.01591	0.3819	32.20	0.02

Pollutant	Emission Factor ¹		Emissions			
	Natural Gas	Propane	(lbs/hr)	(lbs/day)	(lbs/yr)	(tpy)
	(lb/MMCF)	(lb/1,000gal)				
Benezene	0.0058	0.00051410	0.0004545	0.010907	0.919694	0.000460
Formaldehyde	0.0123	0.00109025	0.0009638	0.023130	1.950387	0.000975
Benzo(a)pyrene	0.001	0.00008864	0.0000784	0.001881	0.158568	0.000079
Napthalene	0.0003	0.00002659	0.0000235	0.000564	0.047570	0.000024
Acetalhyde	0.0031	0.00027478	0.0002429	0.005830	0.491561	0.000246
Acrolein	0.0027	0.00023932	0.0002116	0.005077	0.428134	0.000214
Propylene	0.53	0.04697845	0.0415279	0.996670	84.041046	0.042021
Toluene	0.0265	0.00234892	0.0020764	0.049833	4.202052	0.002101
Xylenes	0.0197	0.00174618	0.0015436	0.037046	3.123790	0.001562
Ethylbenzene	0.0069	0.00061161	0.0005406	0.012976	1.094119	0.000547
Hexane	0.0046	0.00040774	0.0003604	0.008650	0.729413	0.000365
Total						0.05

CH4 GHV 1,021.00 Btu/cf

Notes

1) Ventura County Emission Factors for Natural Gas Combustion (10-100 MMBtu/hr), then converted to propane based on 1,021 Btu/cf natural gas and 90,500 Btu/gal propane

The emission rate of HAPs per MMBtu from the combustion of wood is 30 times greater than from As such, the HAP PTE estimate was based on wood combustion.

TABLE 4.5 - GREENHOUSE GAS, BOILER

Facility Annual Heat Input Capacity 1,620,600.00 MMBtu/yr

Wood Heat Input % of Annual Capacity 9.99% Used for comparison purposes only.

Boiler Rating	185 MMBtu/hr	Maximum	Maximum
Annual Capacity	161,897.94 MMBtu/yr	Wood Firing Rate	Steam Production
Operating Hours	875.12 hrs	10.8824 (tons/hr)	105,000.00 (lbs/hr)
Wood HHV	8,500.00 Btu/lb	9,523.41 (tons/yr)	91.89 (million lbs/yr)
Wood LHV	4,500.00 Btu/lb		

Pollutant	Emission Factor		Emissions ²				
	Source ¹	(kg/MMBtu)	(lb/hr)	(tons/yr)	GWP	CO2e(short tons)	CO2e(metric tons)
CH4	Table C-2	0.03	13.0514	5.7108	21	119.93	108.80
N2O	Table C-2	0.0042	1.7130	0.7495	310	232.36	210.79
CO2	Table C-1	93.80	38,256.7709	16,739.7092	1	16,739.71	15,186.03
Total						17,091.99	15,505.61

Wood Heat Input % of Annual Capacity 100.00%

Boiler Rating	185 MMBtu/hr	Maximum	Maximum
Annual Capacity	1,620,600.00 MMBtu/yr	Wood Firing Rate	Steam Production
Operating Hours	8,760.00 hrs	10.88 (tons/hr)	105,000.00 (lbs/hr)
Wood HHV	8,500.00 Btu/lb	95,329.41 (tons/yr)	919.80 (million lbs/yr)
Wood LHV	4,500.00 Btu/lb		

Pollutant	Emission Factor		Emissions ²				
	Source ¹	(kg/MMBtu)	(lb/hr)	(tons/yr)	GWP	CO2e(short tons)	CO2e(metric tons)
CH4	Table C-2	0.0320	13.0514	57.1649	21	1,200.46	1,089.04
N2O	Table C-2	0.0042	0.7770	7.5029	310	2,325.90	2,110.02
CO2	Table C-1	93.8000	17,353.0000	167,564.6564	1	167,564.66	152,012.28
Total						171,091.02	155,211.34

Propane Heat Input % of Annual Capacity 9.99% Limited to less than 10% Based on Permit

Annual Capacity	161,897.94 MMBtu/yr
Burner Rating	80.00 (MMBtu/hr)

Pollutant	Emission Factor		Emissions ²				
	Source ¹	(kg/MMBtu)	(lb/hr)	(tons/yr)	GWP	CO2e(short tons)	CO2e(metric tons)
CH4	Table C-2	0.0030	0.529	0.5354	21	11.24	10.20
N2O	Table C-2	0.0006	0.106	0.1071	310	33.19	30.11
CO2	Table C-1	61.4600	10,839.676	10,968.2572	1	10,968.26	9,950.25
Total						11,012.69	9,990.56

Discussion

Firing on wood fuel results in the highest GHGs per unit of heat produced (see scenario 1), therefore PTE is calculated based upon 100% firing on wood fuel. CO2e is calculated in English units in accordance with District Rule 111.

Notes

1) 40 CFR Part 98 Subpart C, Section 98.38

2) Emissions calculated pursuant to District Rule 111 in english short tons and 40 CFR Part 98 in metric tons

kg to short ton 0.00110231 kg to pound 2.20462 kg to metric ton 0.001

TABLE 4.6 - BOILER EMERGENCY FEEDWATER PUMP

Tier 0

HP = 125
 Gallons/Hour = 6.4
 MBTUs/Hr = 0.90
 Hours/Day = 24
 Hours/Quarter = 2190
 Hours/Year = 20
 Max Hours/Year = 500

Using AP42 Efactors			Device Potential to Emit			
Pollutant	grams/hp-hr	lbs/hr	lb/day	lb/quarter	lb/year	tons/yr
PM	0.9979	0.275	6.60	602.24	137.50	6.87E-02
NOx	14.0614	3.875	93.00	8486.13	1937.47	9.69E-01
TOC	1.1204	0.309	7.41	676.17	154.38	7.72E-02
CO	3.0300	0.835	20.04	1828.62	417.49	2.09E-01
CO2	521.6400	143.750	3450	314812.50	71875.00	3.59E+01

SOx	Using Mass Bal Eq	0.0007	-	-	0.01	6.77E-06
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Using AP42 Efactors			Proposed Emission Limits (Allowable)			
Pollutant	grams/hp-hr	lbs/hr	lb/day	lb/quarter	lb/year	tons/yr
PM	0.9979	0.275	-	-	5.50	2.75E-03
NOx	14.0614	3.875	-	-	77.50	3.87E-02
TOC	1.1204	0.309	-	-	6.18	3.09E-03
CO	3.0300	0.835	-	-	16.70	8.35E-03
CO2	521.6400	143.750	-	-	2875.00	1.44E+00

SOx	Using Mass Bal Eq	0.0007	-	-	0.01	6.77E-06
-----	-------------------	--------	---	---	------	----------

Using AP42 Efactors			Equipment Emissions As Proposed (Actual)			
Pollutant	grams/hp-hr	lbs/hr	lb/day	lb/quarter	lb/year	tons/yr
PM	0.9979	0.275	-	-	5.50	2.75E-03
NOx	14.0614	3.875	-	-	77.50	3.87E-02
TOC	1.1204	0.309	-	-	6.18	3.09E-03
CO	3.0300	0.835	-	-	16.70	8.35E-03
CO2	521.6400	143.750	-	-	2875.00	1.44E+00

SOx	Using Mass Bal Eq	0.0007	-	-	0.01	6.77E-06
-----	-------------------	--------	---	---	------	----------

HARP Device Process Data - Rates & Emissions

Equipment Size (HP)	125
Output capacity (MW)	n/a
1000 gallons / hour	0.0064
1000 gallons / year	0.128
<u>EMS Factor</u>	
PM10	0.9979 42.97 lb / 1000 gallons
NOx	14.0614 605.46 lb / 1000 gallons
CO	3.0300 130.47 lb / 1000 gallons
VOC	1.1204 48.24 lb / 1000 gallons
SOx	Mass Balance Method 0.1058 lb / 1000 gallons
PAH's*	0.000168 0.0235 lb / 1000 gallons
DPM (PM10)	0.9979 42.97 lb / 1000 gallons

* EF in lb/MMBtu

Sulfur Content of Fuel	0.000015 grams per gram of fuel
Diesel No. 2 F-factor	9400 dscf/MMBtu
Molecular Weight SO2	64 grams/mole
Standard Molar Volume	0.8493 dscf/mol (68 degrees F and 1 atm)
1 gram	15.432 grains
Gallon of Fuel	7.05 Pounds
For every gram of S	2 grams of SO2
liters	22.4 grams per mole
Cubic foot	28.3 liters
Heat Input Diesel (gallon)	140000 BTU
Pound	454 grams
MMBtu	1000000 BTU

PM10 Concentration (combustion contaminants)
 1924.9491 grains per hour
 8422.4 cubic feet per hour
0.228551137 grains per cubic foot exhaust gas
 0.2 grains / dscf is allowable by District Regulation

SO2 Concentration (%SO2 by volume)
 9.02385E-07
0.902385159 ppm by volume
 1,000 ppmv is allowable by District Regulation

SOx Mass Balance Method
 0.0006768 pounds per hour
 0.10575 pounds per 1000 gallons

TABLE 4.7 - EMERGENCY GENERATOR

Tier 0

HP = 335
 Gallons/Hour = 17.1
 MBTUs/Hr = 2.39
 Hours/Day = 24
 Hours/Quarter = 2190
 Hours/Year = 20
 Max Hours/Year = 500

Using AP42 Efactors		Device Potential to Emit				
Pollutant	grams/hp-hr	lbs/hr	lb/day	lb/quarter	lb/year	tons/yr
PM	0.9979	0.737	17.69	1614.00	368.49	1.84E-01
NOx	14.0614	10.385	249.24	22742.83	5192.43	2.60E+00
TOC	1.1204	0.827	19.86	1812.13	413.73	2.07E-01
CO	3.0300	2.238	53.71	4900.70	1118.88	5.59E-01
CO2	521.6400	385.250	9246	843697.50	192625.00	9.63E+01

SOx	Using Mass Bal Eq	0.0018	-	-	0.04	1.81E-05
-----	-------------------	--------	---	---	------	----------

Using AP42 Efactors		Proposed Emission Limits (Allowable)				
Pollutant	grams/hp-hr	lbs/hr	lb/day	lb/quarter	lb/year	tons/yr
PM	0.9979	0.737	-	-	14.74	7.37E-03
NOx	14.0614	10.385	-	-	207.70	1.04E-01
TOC	1.1204	0.827	-	-	16.55	8.27E-03
CO	3.0300	2.238	-	-	44.76	2.24E-02
CO2	521.6400	385.250	-	-	7705.00	3.85E+00

SOx	Using Mass Bal Eq	0.0018	-	-	0.04	1.81E-05
-----	-------------------	--------	---	---	------	----------

Using AP42 Efactors		Equipment Emissions As Proposed (Actual)				
Pollutant	grams/hp-hr	lbs/hr	lb/day	lb/quarter	lb/year	tons/yr
PM	0.9979	0.737	-	-	14.74	7.37E-03
NOx	14.0614	10.385	-	-	207.70	1.04E-01
TOC	1.1204	0.827	-	-	16.55	8.27E-03
CO	3.0300	2.238	-	-	44.76	2.24E-02
CO2	521.6400	385.250	-	-	7705.00	3.85E+00

SOx	Using Mass Bal Eq	0.0018	-	-	0.04	1.81E-05
-----	-------------------	--------	---	---	------	----------

HARP Device Process Data - Rates & Emissions

Equipment Size (HP)	285
Output capacity (MW)	0.175
1000 gallons / hour	0.0171
1000 gallons / year	0.342
<u>EMS Factor</u>	
PM10	0.9979 43.10 lb / 1000 gallons
NOx	14.0614 607.30 lb / 1000 gallons
CO	3.0300 130.86 lb / 1000 gallons
VOC	1.1204 48.39 lb / 1000 gallons
SOx	Mass Balance Method 0.1058 lb / 1000 gallons
PAH's*	0.000168 0.0235 lb / 1000 gallons
DPM (PM10)	0.9979 43.10 lb / 1000 gallons

* EF in lb/MMBtu

Sulfur Content of Fuel	0.000015 grams per gram of fuel
Diesel No. 2 F-factor	9400 dscf/MMBtu
Molecular Weight SO2	64 grams/mole
Standard Molar Volume	0.8493 dscf/mol (68 degrees F and 1 atm)
1 gram	15.432 grains
Gallon of Fuel	7.05 Pounds
For every gram of S	2 grams of SO2
liters	22.4 grams per mole
Cubic foot	28.3 liters
Heat Input Diesel (gallon)	140000 BTU
Pound	454 grams
MMBtu	1000000 BTU

PM10 Concentration (combustion contaminants)
 5158.863588 grains per hour
 22503.6 cubic feet per hour
0.229246147 grains per cubic foot exhaust gas
 0.2 grains / dscf is allowable by District Regulation

SO2 Concentration (%SO2 by volume)
 9.02385E-07
0.902385159 ppm by volume
 1,000 ppmv is allowable by District Regulation

SOx Mass Balance Method
 0.001808325 pounds per hour
 0.10575 pounds per 1000 gallons

FIGURE 4.1 - SCREEN3, CO

***** SCREEN3 MODEL *****

**** VERSION DATED 96043 ****

ENTER TITLE FOR THIS RUN (UP TO 79 CHARACTERS):

Blue Lake Power Boiler, Main Stack - CO

ENTER SOURCE TYPE: P FOR POINT

F FOR FLARE

A FOR AREA

V FOR VOLUME

ALSO ENTER ANY OF THE FOLLOWING OPTIONS ON THE SAME LINE:

N - TO USE THE NON-REGULATORY BUT CONSERVATIVE BRODE 2
MIXING HEIGHT OPTION,

nn.n - TO USE AN ANEMOMETER HEIGHT OTHER THAN THE REGULATORY
(DEFAULT) 10 METER HEIGHT.

SS - TO USE A NON-REGULATORY CAVITY CALCULATION ALTERNATIVE

Example - PN 7.0 SS (entry for a point source)

ENTER SOURCE TYPE AND ANY OF THE ABOVE OPTIONS:

P

ENTER EMISSION RATE (G/S):

69.928

ENTER STACK HEIGHT (M):

30.48

ENTER STACK INSIDE DIAMETER (M):

1.52

ENTER STACK GAS EXIT VELOCITY OR FLOW RATE:

OPTION 1 : EXIT VELOCITY (M/S):

DEFAULT - ENTER NUMBER ONLY

OPTION 2 : VOLUME FLOW RATE (M**3/S):

EXAMPLE "VM=20.00"

OPTION 3 : VOLUME FLOW RATE (ACFM):

EXAMPLE "VF=1000.00"

15.65

ENTER STACK GAS EXIT TEMPERATURE (K):

388.7

ENTER AMBIENT AIR TEMPERATURE (USE 293 FOR DEFAULT) (K):

293

ENTER RECEPTOR HEIGHT ABOVE GROUND (FOR FLAGPOLE RECEPTOR) (M):

2

ENTER URBAN/RURAL OPTION (U=URBAN, R=RURAL):

R

CONSIDER BUILDING DOWNWASH IN CALCS? ENTER Y OR N:

N
USE COMPLEX TERRAIN SCREEN FOR TERRAIN ABOVE STACK HEIGHT?
ENTER Y OR N:

N
USE SIMPLE TERRAIN SCREEN WITH TERRAIN ABOVE STACK BASE?
ENTER Y OR N:

N
ENTER CHOICE OF METEOROLOGY;
1 - FULL METEOROLOGY (ALL STABILITIES & WIND SPEEDS)
2 - INPUT SINGLE STABILITY CLASS
3 - INPUT SINGLE STABILITY CLASS AND WIND SPEED

1

USE AUTOMATED DISTANCE ARRAY? ENTER Y OR N:

Y

ENTER MIN AND MAX DISTANCES TO USE (M):

10

10000

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)		U10M STAB	USTK (M/S)	MIX HT (M/S)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
10.	.0000	1	1.0	1.1	320.0	230.58	8.06	7.50	NO
100.	.1648E-01	5	1.0	1.5	10000.0	103.41	19.61	18.97	NO
200.	44.57	1	3.0	3.2	960.0	97.18	51.75	32.25	NO
300.	291.1	1	3.0	3.2	960.0	97.18	73.90	50.62	NO
400.	412.4	1	3.0	3.2	960.0	97.18	94.65	73.67	NO
500.	394.6	1	2.0	2.2	640.0	130.53	116.60	108.49	NO
600.	370.2	2	4.0	4.3	1280.0	80.50	98.54	64.02	NO
700.	435.3	1	1.0	1.1	320.0	230.58	162.68	220.86	NO
800.	436.0	1	1.0	1.1	320.0	230.58	180.68	288.72	NO
900.	405.3	1	1.0	1.1	320.0	230.58	198.59	367.60	NO
1000.	372.6	1	1.0	1.1	320.0	230.58	216.40	457.44	NO
1100.	344.5	1	1.0	1.1	320.0	230.58	234.08	558.23	NO
1200.	321.3	3	3.0	3.4	960.0	94.99	123.10	74.55	NO
1300.	310.0	3	3.0	3.4	960.0	94.99	132.19	79.88	NO
1400.	297.6	3	2.5	2.8	800.0	107.89	141.75	86.06	NO
1500.	288.0	3	2.5	2.8	800.0	107.89	150.69	91.31	NO
1600.	276.9	3	2.5	2.8	800.0	107.89	159.58	96.55	NO
1700.	266.5	3	2.0	2.2	640.0	127.24	169.24	103.11	NO
1800.	261.8	2	1.0	1.1	320.0	230.58	266.48	216.00	NO
1900.	259.1	2	1.0	1.1	320.0	230.58	279.00	228.30	NO

2000.	255.0	2	1.0	1.1	320.0	230.58	291.46	240.71	NO
2100.	249.9	2	1.0	1.1	320.0	230.58	303.87	253.21	NO
2200.	244.2	2	1.0	1.1	320.0	230.58	316.22	265.81	NO
2300.	238.0	2	1.0	1.1	320.0	230.58	328.52	278.50	NO
2400.	231.6	2	1.0	1.1	320.0	230.58	340.77	291.26	NO
2500.	225.1	2	1.0	1.1	320.0	230.58	352.96	304.10	NO
2600.	218.6	2	1.0	1.1	320.0	230.58	365.10	317.01	NO
2700.	213.0	4	3.5	4.1	1120.0	82.77	168.54	62.65	NO
2800.	209.4	4	3.5	4.1	1120.0	82.77	174.13	64.05	NO
2900.	205.7	4	3.5	4.1	1120.0	82.77	179.69	65.44	NO
3000.	206.1	5	1.0	1.5	10000.0	103.41	139.70	47.08	NO
3500.	231.0	5	1.0	1.5	10000.0	103.41	160.12	50.60	NO
4000.	247.3	5	1.0	1.5	10000.0	103.41	180.27	53.95	NO
4500.	252.8	5	1.0	1.5	10000.0	103.41	200.17	56.78	NO
5000.	254.5	5	1.0	1.5	10000.0	103.41	219.85	59.48	NO
5500.	253.4	5	1.0	1.5	10000.0	103.41	239.33	62.06	NO
6000.	250.3	5	1.0	1.5	10000.0	103.41	258.61	64.54	NO
6500.	245.9	5	1.0	1.5	10000.0	103.41	277.72	66.93	NO
7000.	240.6	5	1.0	1.5	10000.0	103.41	296.67	69.24	NO
7500.	234.8	5	1.0	1.5	10000.0	103.41	315.47	71.48	NO
8000.	228.6	5	1.0	1.5	10000.0	103.41	334.12	73.65	NO
8500.	222.3	5	1.0	1.5	10000.0	103.41	352.64	75.76	NO
9000.	215.9	5	1.0	1.5	10000.0	103.41	371.03	77.81	NO
9500.	209.6	5	1.0	1.5	10000.0	103.41	389.30	79.82	NO
10000.	203.3	5	1.0	1.5	10000.0	103.41	407.46	81.77	NO

ITERATING TO FIND MAXIMUM CONCENTRATION . . .

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:

748.	442.5	1	1.0	1.1	320.0	230.58	171.51	252.72	NO
------	-------	---	-----	-----	-------	--------	--------	--------	----

USE DISCRETE DISTANCES? ENTER Y OR N:

N

DO YOU WISH TO MAKE A FUMIGATION CALCULATION? ENTER Y OR N:

N

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
--------------------------	-----------------------	--------------------	-------------------

SIMPLE TERRAIN	442.5	748.	0.
----------------	-------	------	----

**** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS ****

DO YOU WANT TO PRINT A HARDCOPY OF THE RESULTS? ENTER Y OR N:

END

CO at 25 C and 1 ATM

1 ppm = 1145 ug/m3

1 ug/m3 = 0.000873 ppm

442.5 ug/m3 = 0.386303 ppm

Desing value for 2011 for the District is 2 ppm

Background + Source = Total Impact. 2.386303

California AAQS
one-hour standard 20 ppm

Total Impact = 12% of standard

DRAFT

FIGURE 4.2 - SCREEN3, NO2

Screen 3

***** SCREEN3 MODEL *****

**** VERSION DATED 96043 ****

ENTER TITLE FOR THIS RUN (UP TO 79 CHARACTERS):

Blue Lake Power Boiler, Main Stack - NOx

ENTER SOURCE TYPE: P FOR POINT

F FOR FLARE

A FOR AREA

V FOR VOLUME

ALSO ENTER ANY OF THE FOLLOWING OPTIONS ON THE SAME LINE:

N - TO USE THE NON-REGULATORY BUT CONSERVATIVE BRODE 2

MIXING HEIGHT OPTION,

nn.n - TO USE AN ANEMOMETER HEIGHT OTHER THAN THE REGULATORY
(DEFAULT) 10 METER HEIGHT.

SS - TO USE A NON-REGULATORY CAVITY CALCULATION ALTERNATIVE

Example - PN 7.0 SS (entry for a point source)

ENTER SOURCE TYPE AND ANY OF THE ABOVE OPTIONS:

P

ENTER EMISSION RATE (G/S):

10.489

ENTER STACK HEIGHT (M):

30.48

ENTER STACK INSIDE DIAMETER (M):

1.52

ENTER STACK GAS EXIT VELOCITY OR FLOW RATE:

OPTION 1 : EXIT VELOCITY (M/S):

DEFAULT - ENTER NUMBER ONLY

OPTION 2 : VOLUME FLOW RATE (M**3/S):

EXAMPLE "VM=20.00"

OPTION 3 : VOLUME FLOW RATE (ACFM):

EXAMPLE "VF=1000.00"

15.65

ENTER STACK GAS EXIT TEMPERATURE (K):

388.7

ENTER AMBIENT AIR TEMPERATURE (USE 293 FOR DEFAULT) (K):

293

ENTER RECEPTOR HEIGHT ABOVE GROUND (FOR FLAGPOLE RECEPTOR) (M):

2

ENTER URBAN/RURAL OPTION (U=URBAN, R=RURAL):

R
 CONSIDER BUILDING DOWNWASH IN CALCS? ENTER Y OR N:
 N
 USE COMPLEX TERRAIN SCREEN FOR TERRAIN ABOVE STACK HEIGHT?
 ENTER Y OR N:
 N
 USE SIMPLE TERRAIN SCREEN WITH TERRAIN ABOVE STACK BASE?
 ENTER Y OR N:
 N
 ENTER CHOICE OF METEOROLOGY;
 1 - FULL METEOROLOGY (ALL STABILITIES & WIND SPEEDS)
 2 - INPUT SINGLE STABILITY CLASS
 3 - INPUT SINGLE STABILITY CLASS AND WIND SPEED

1

USE AUTOMATED DISTANCE ARRAY? ENTER Y OR N:

Y

ENTER MIN AND MAX DISTANCES TO USE (M):

10

10000

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)		U10M STAB	USTK (M/S)	MIX HT (M/S)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
10.	.0000	1	1.0	1.1	320.0	230.58	8.06	7.50	NO
100.	.2473E-02	5	1.0	1.5	10000.0	103.41	19.61	18.97	NO
200.	6.685	1	3.0	3.2	960.0	97.18	51.75	32.25	NO
300.	43.67	1	3.0	3.2	960.0	97.18	73.90	50.62	NO
400.	61.87	1	3.0	3.2	960.0	97.18	94.65	73.67	NO
500.	59.20	1	2.0	2.2	640.0	130.53	116.60	108.49	NO
600.	55.52	2	4.0	4.3	1280.0	80.50	98.54	64.02	NO
700.	65.29	1	1.0	1.1	320.0	230.58	162.68	220.86	NO
800.	65.40	1	1.0	1.1	320.0	230.58	180.68	288.72	NO
900.	60.79	1	1.0	1.1	320.0	230.58	198.59	367.60	NO
1000.	55.89	1	1.0	1.1	320.0	230.58	216.40	457.44	NO
1100.	51.67	1	1.0	1.1	320.0	230.58	234.08	558.23	NO
1200.	48.19	3	3.0	3.4	960.0	94.99	123.10	74.55	NO
1300.	46.50	3	3.0	3.4	960.0	94.99	132.19	79.88	NO
1400.	44.64	3	2.5	2.8	800.0	107.89	141.75	86.06	NO
1500.	43.21	3	2.5	2.8	800.0	107.89	150.69	91.31	NO
1600.	41.53	3	2.5	2.8	800.0	107.89	159.58	96.55	NO
1700.	39.97	3	2.0	2.2	640.0	127.24	169.24	103.11	NO

1800.	39.27	2	1.0	1.1	320.0	230.58	266.48	216.00	NO
1900.	38.86	2	1.0	1.1	320.0	230.58	279.00	228.30	NO
2000.	38.25	2	1.0	1.1	320.0	230.58	291.46	240.71	NO
2100.	37.49	2	1.0	1.1	320.0	230.58	303.87	253.21	NO
2200.	36.63	2	1.0	1.1	320.0	230.58	316.22	265.81	NO
2300.	35.70	2	1.0	1.1	320.0	230.58	328.52	278.50	NO
2400.	34.73	2	1.0	1.1	320.0	230.58	340.77	291.26	NO
2500.	33.76	2	1.0	1.1	320.0	230.58	352.96	304.10	NO
2600.	32.79	2	1.0	1.1	320.0	230.58	365.10	317.01	NO
2700.	31.95	4	3.5	4.1	1120.0	82.77	168.54	62.65	NO
2800.	31.41	4	3.5	4.1	1120.0	82.77	174.13	64.05	NO
2900.	30.85	4	3.5	4.1	1120.0	82.77	179.69	65.44	NO
3000.	30.91	5	1.0	1.5	10000.0	103.41	139.70	47.08	NO
3500.	34.65	5	1.0	1.5	10000.0	103.41	160.12	50.60	NO
4000.	37.09	5	1.0	1.5	10000.0	103.41	180.27	53.95	NO
4500.	37.93	5	1.0	1.5	10000.0	103.41	200.17	56.78	NO
5000.	38.17	5	1.0	1.5	10000.0	103.41	219.85	59.48	NO
5500.	38.00	5	1.0	1.5	10000.0	103.41	239.33	62.06	NO
6000.	37.54	5	1.0	1.5	10000.0	103.41	258.61	64.54	NO
6500.	36.88	5	1.0	1.5	10000.0	103.41	277.72	66.93	NO
7000.	36.09	5	1.0	1.5	10000.0	103.41	296.67	69.24	NO
7500.	35.21	5	1.0	1.5	10000.0	103.41	315.47	71.48	NO
8000.	34.29	5	1.0	1.5	10000.0	103.41	334.12	73.65	NO
8500.	33.34	5	1.0	1.5	10000.0	103.41	352.64	75.76	NO
9000.	32.38	5	1.0	1.5	10000.0	103.41	371.03	77.81	NO
9500.	31.43	5	1.0	1.5	10000.0	103.41	389.30	79.82	NO
10000.	30.50	5	1.0	1.5	10000.0	103.41	407.46	81.77	NO

ITERATING TO FIND MAXIMUM CONCENTRATION . . .

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:

748.	66.37	1	1.0	1.1	320.0	230.58	171.51	252.72	NO
------	-------	---	-----	-----	-------	--------	--------	--------	----

USE DISCRETE DISTANCES? ENTER Y OR N:

N

DO YOU WISH TO MAKE A FUMIGATION CALCULATION? ENTER Y OR N:

N

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
--------------------------	-----------------------	--------------------	-------------------

SIMPLE TERRAIN	66.37	748.	0.
----------------	-------	------	----

** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

DO YOU WANT TO PRINT A HARDCOPY OF THE RESULTS? ENTER Y OR N:

END

NOx at 25 C and 1 ATM

1 ppm = 1,880 ug/m3

1 ug/m3 = 0.000532 ppm

Default ratio of NO to NO2 is 0.9

1 ppm = 1880 ug/m3

1 ug/m3 = 0.000532 ppm

66.37 ug/m3 = 0.035309 ppm

Assume 90% is NO2 = 0.031778 ppm

Desing value for 2011 for the District is 0.023 ppm

Background + Source = Total Impact. 0.054778

Federal AAQS

one hour = 100 ppb (.1 ppm)

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Operating Procedures & Manuals

Zurn Traveling Grate

ESP Operating Manual

Boiler Manual

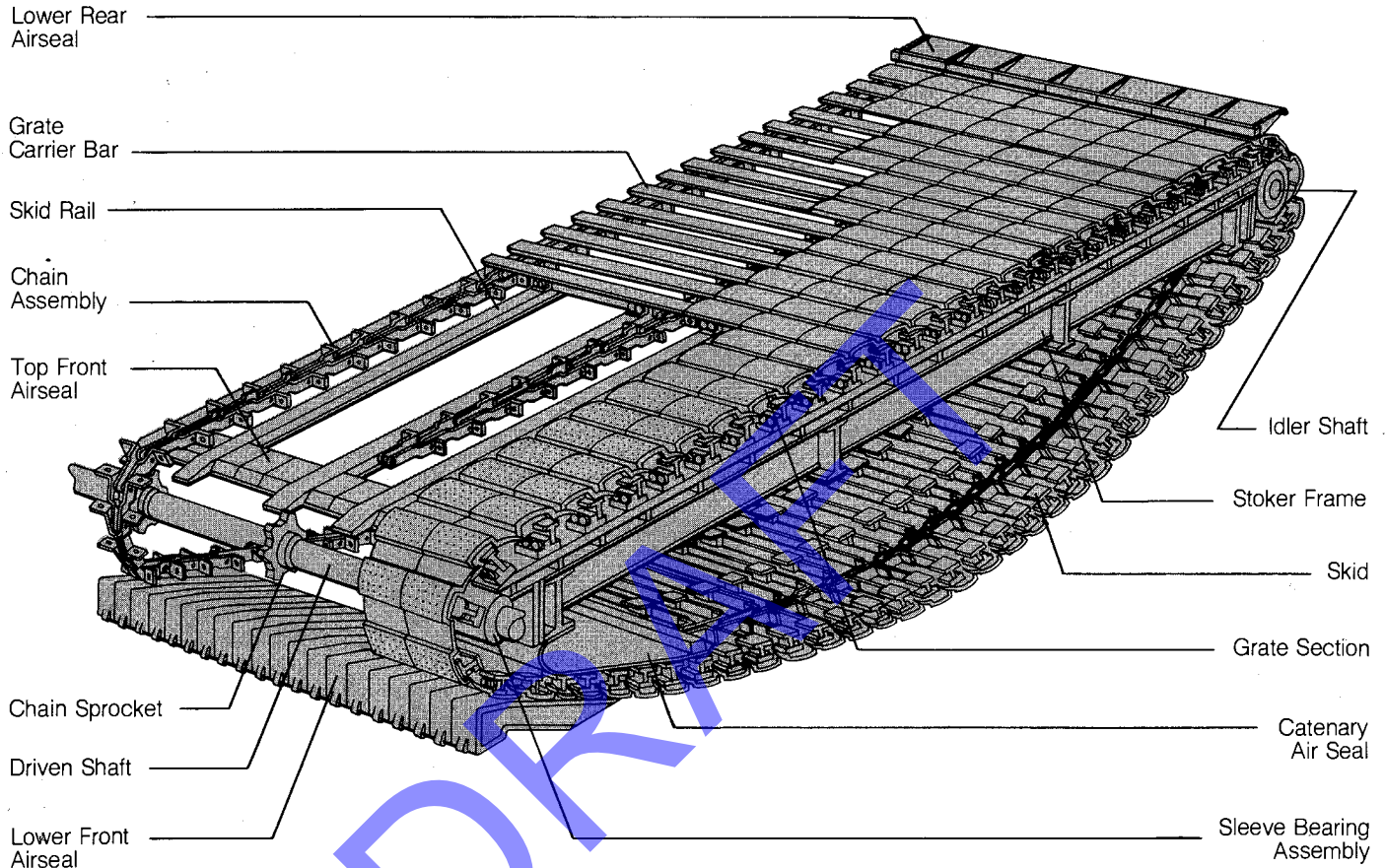
Multi-clone Information

Emergency Boiler Feed-water Pump Owner's Manual

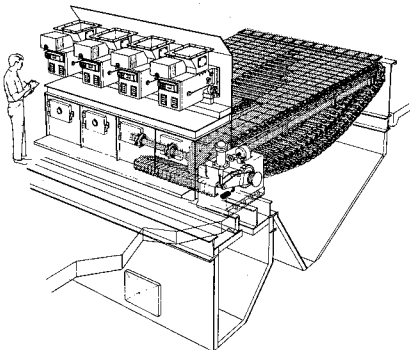
Emergency Generator Owner's Manual

Zurn Spreader Stokers

Travagrate® Grate Assembly



Zurn TRAVAGRATE continuous-ash-discharge spreader stokers provide maximum performance ... are easy to operate and maintain ... and efficiently complement any boiler design.



Description

In the Zurn TRAVAGRATE spreader stoker, fine particles of fuel are rapidly burned in suspension while coarse, heavier particles which are spread evenly on the forward-moving grates form a fast-burning fuel bed. To compensate for variations in the ash content of the fuel, the grate speed can be adjusted from 0 to approximately 24 feet per hour. Ash is continuously discharged over the front end of the grate into an ash pit or hopper.

The Zurn TRAVAGRATE grate sections, mounted on carrier bars, are pulled forward by forged-steel chain links on skid rails. Heavy-duty, hardened sprockets specially designed for the roller chain pin design, reduce stress and provide longer life. Sprockets located on the drive shaft, pull the chain assembly around the

front while sprockets on the idler shaft align the grate assembly at the rear.

The unique benefits of the Zurn TRAVAGRATE spreader stoker grate components are described in detail on the back of this sheet.

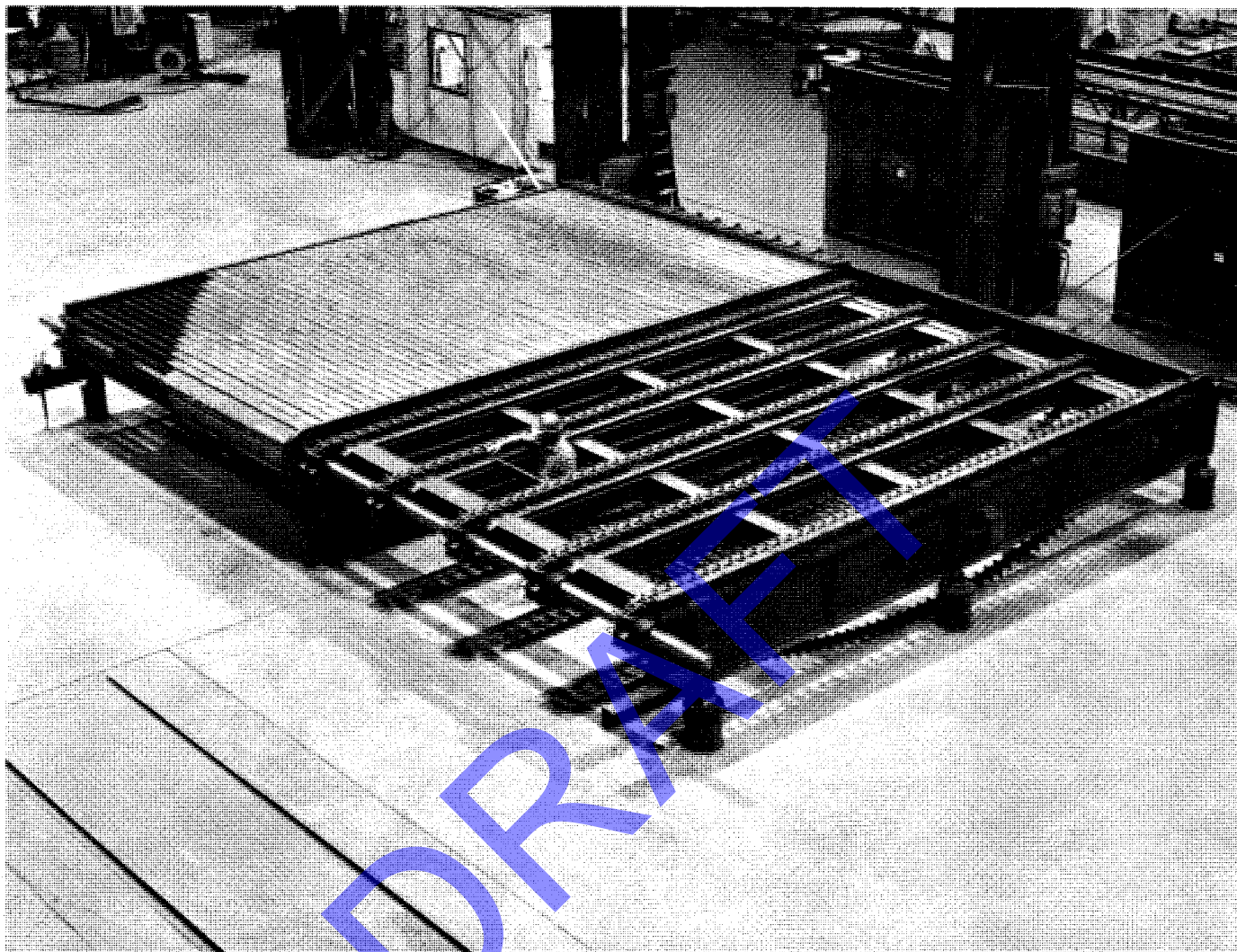
General Design Data

Boiler Capacity Range:	30,000-400,000 lbs/hr
Grate Widths:	7 to 34 feet
Grate Lengths (shaft ϕ to ϕ):	11 to 25 feet
Grate Drive(s):	Hydraulic
Fuel Types:	All Solid Fuels

ZURN a step ahead of tomorrow

ZURN INDUSTRIES, INC.
ENERGY DIV.
1422 EAST AVE.
ERIE, PA, U.S.A. 16503
PHONE: 814/452-6421

Zurn TRAVAGRATE Grate Assembly Components Provide Reliable, Maximum Performance.



Benefits

The Zurn TRAVAGRATE spreader stoker incorporates a variety of design and construction features which provide numerous benefits.

- ☐ Jamming is prevented by automatic take-up of the grate chains by gravity-maintained grate catenary. No external shaft adjustments are necessary.
- ☐ Boiler operation integrity is assured by a series of air and coal seals which effectively interface the stoker with the boiler and undergrate air supply plenum.
- ☐ Complete combustion is assured by turbulence and thorough mixing provided by a Zurn overfire air system.
- ☐ Boiler efficiency is increased 2 to 3% by reinjecting 30 to 50% of the fly carbon back into the furnace.
- ☐ Downtime due to chain breakage is avoided due to the use of forged steel chain links.
- ☐ Stress on sprockets is reduced by using hardened rollers to guide not drag the chain.
- ☐ Continuous operation is assured by rugged split-sleeve, graphite-plugged bronze bearings strategically located to support both drive and idler shafts.
- ☐ Maintenance costs are reduced due to short grate sections (12" to 15" long). Grates are constructed of high-quality, heavy-duty, heat-resisting cast-iron or ductile iron.
- ☐ Grates are easily removed without taking the boiler/stoker out of service.
- ☐ Grate warpage is eliminated by level and uniform grate support, hardened skids and skid rails. Each section is individually supported by its own series of skid shoes.
- ☐ Immediate shutdown occurs if grates are obstructed in any way. A grate alarm system built into the rear end of the stoker stops the stoker and alerts the operator.
- ☐ Ash is directed only to the ash pit. The grate curvature design keeps the grates closed without weights.

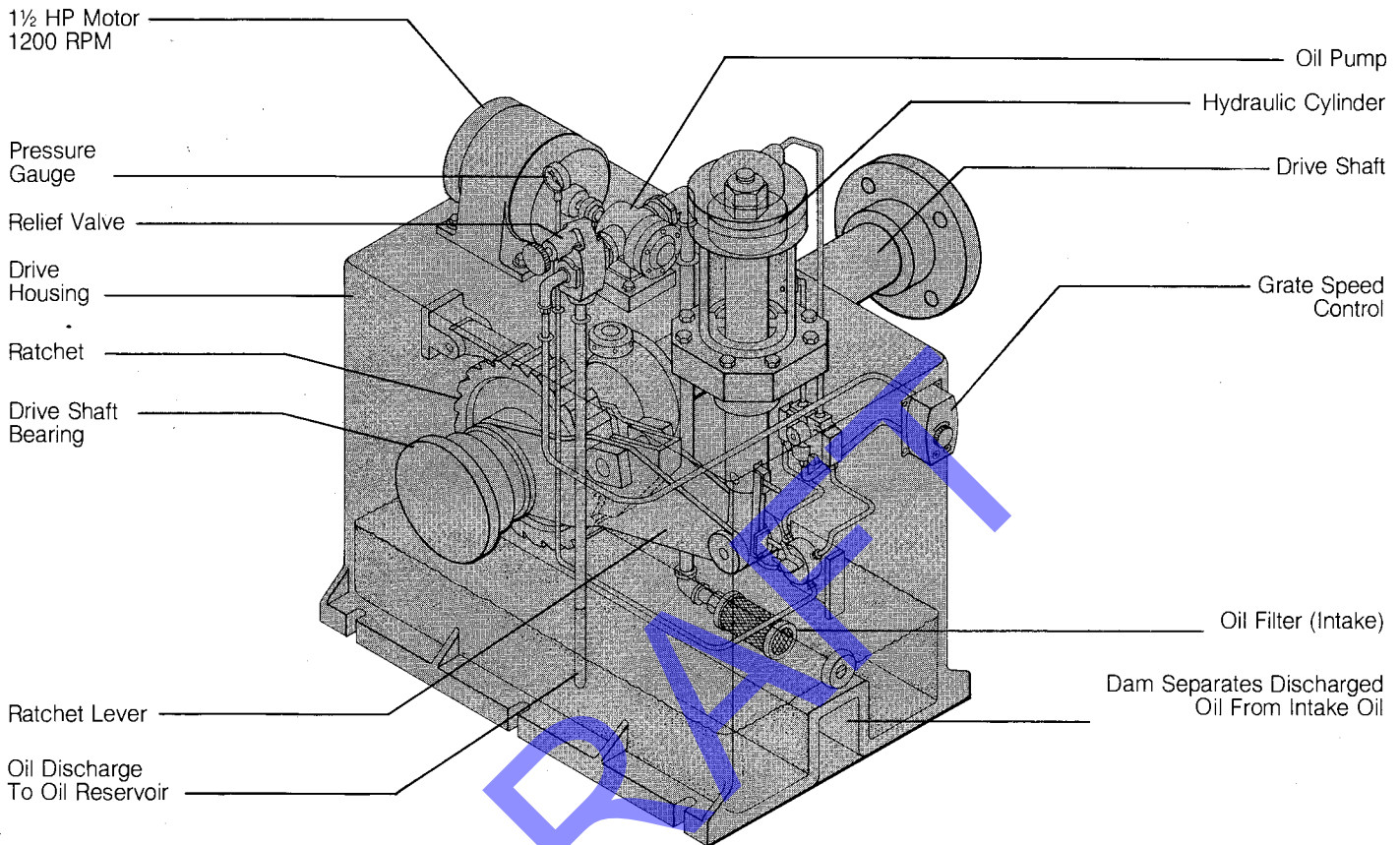


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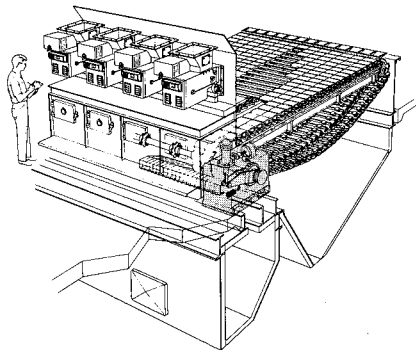
ZURN INDUSTRIES, INC.
ENERGY DIV.
1422 EAST AVE.
ERIE, PA, U.S.A. 16503
PHONE: 814/452-6421

Zurn Spreader Stokers

Hydraulic Grate Drive



The Zurn hydraulic grate drive is a self-contained unit offering safe, sure, efficient and reliable power for any traveling grate.



Description and Application

The Zurn hydraulic grate drive offers safe, sure, efficient, reliable power for any traveling grate. It is a self-contained unit with no external piping. The hydraulic pump and control regulate the flow and pressure to the hydraulic cylinder which is connected through linkage to a ratchet gear that drives the main shaft. Units can be designed to develop up to 47,000 ft. lbs. of torque each.

The hydraulic drive and main shaft are connected by a heavy-duty flange coupling. No shear pins are used in connection with the unit drive since the hydraulic unit is equipped with a factory-set relief valve to protect the grates should the need arise. To compensate for variation of the ash content in the fuel, the drive can be infinitely regulated to control the grate speed from 0 to approximately 24 feet per hour. Dual drive units are utilized on larger systems.



Zurn self-contained hydraulic grate drive is skid-mounted for shipment to stoker site.



a step ahead of tomorrow

ZURN INDUSTRIES, INC.
ENERGY DIV.
1422 EAST AVE.
ERIE, PA, U.S.A. 16503
PHONE: 814/452-6421

Proposed Conditions

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**NORTH COAST UNIFIED
AIR QUALITY MANAGEMENT DISTRICT
2300 Myrtle Avenue, Eureka, CA 95501
Phone: (707)443-3093 · Fax: (707) 443-3099**



**TITLE V FEDERAL OPERATING PERMIT
&
NCUAQMD PERMIT TO OPERATE**

TITLE V PERMIT NO: NCU 097-12

ISSUED TO:

Renewable Energy Providers, Inc
1615 Continental Street, Suite 100
Redding, CA 96001

PLANT SITE LOCATION:

Blue Lake Power, LLC
200 Taylor Way
Blue Lake, CA 95525

1st RENEWAL PERMIT ISSUED:

TBD

PERMIT EXPIRES:

March 18, 2018

PERMIT REVISION HISTORY:

Initial Permit	March 18, 1998
Minor Modification	August 10, 1999

RESPONSIBLE OFFICIAL:

Mr. Glenn Zane
REP Representative
(530) 246-2455

CONTACT PERSON:

Mr. Randy Paterson
Operations Manager
(707) 668-5361

NATURE OF BUSINESS:
Commercial Electricity Generation

**STANDARD INDUSTRIAL
CLASSIFICATION (SIC):**
4911

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PERMIT SUMMARY

This permit is a Title V Permit to Operate issued pursuant to North Coast Unified Air Quality Management District (District) Rules and Regulations and the U.S. EPA's 40 CFR Part 70 (State Operating Permit Programs) Regulations.

The application for this air quality Permit to Operate has been evaluated for compliance with District, State, and Federal air quality rules and regulations. The following listed rules are the major rules that were found to be applicable at the time of this permit review, and based on the information submitted with the Title V permit application.

Federally Enforceable Rules & Regulations

Citation	Description	Adoption Date
Regulation I, Rule 102	Permit Requirements	5-19-05
Regulation I, Rule 110	New Source Review Standards	5-19-05
Regulation I, Rule 103	Action on Applications	5-19-05
Regulation I, Rule 104.2	Visible Emissions	5-19-05
Regulation I, Rule 104.3	Particulate Matter	5-19-05
Regulation I, Rule 104.4	Fugitive Dust	5-19-05
Regulation IV, Rule 412	Major Source Assessment	5-19-05
Regulation V	Procedures for Issuing Permits to Operate for Sources Subject to Title V	5-19-05
NSPS	40 CFR 60 Subpart Db – Standards of Performance for Industrial, Commercial, and Institutional Steam Generating Units	Promulgated 12-16-1987
NESHAP	40 CFR 63 Subpart ZZZZ – Stationary IC engines	06-15-2004
NESHAP	40 CFR 63 Subpart JJJJJJ Area Source Boilers	3-21-2011
CAM	40 CFR Part 64	10-22-1997

Non-Federally Enforceable Rules & Regulations

Citation	Description	Adoption Date
Regulation I, Rule 104.5	Sulfur Oxide Emissions	5-19-05
Regulation IV, Rule 400	Stationary Source Permit Fees	5-19-05
Regulation IV, Rule 406	Title V Fees	5-19-05
Regulation IV, Rule 407	Air Toxic "Hot Spots" (AB2588) Fees	5-19-05
CCR Title 17 Section 93115	Mandatory Reporting of Greenhouse Gas Emissions	12-06-07
CCR Title 17 Section 93115	Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines	Approved 9-08-2004, last revised 10-18-2007

FACILITY DESCRIPTION

PERMIT HISTORY

Initial Permit	March 18, 1998
Minor Modification	August 10, 1999

EQUIPMENT DESCRIPTION

Blue Lake Power, LLC operates a wood waste fired boiler rated at 105,000 pounds of steam/hour (185 MMBtu/hour gross heat input) to produce electricity (11.7 MW gross) for sale to SDG&E. The boiler is a stoker type where fuel is fed to a traveling grate system. The primary fuel consists of woody biomass typically obtained from forest lands within a 150 mile radius of the facility. The acceptable operational range identified by the boiler manufacturer for fuel moisture content within the furnace is 30% to 50%. The operation of the fuel pre-dryer allows the facility to accept fuel with a moisture content as high as 60% before it enters the pre-dryer. A single 80 million BTU/hour propane gas burner, manufactured by Zurn, is used to supply heat for startups. Particulate matter from the wood waste combustion process is controlled with a mechanical multiclone followed by an electrostatic precipitator. Nitrogen oxides (NO_x) and carbon monoxide (CO) are controlled by a forced overfire air system.

Emission limits based on 24 hour block averages for carbon monoxide (CO) and nitrogen oxides (NO) have been established to accommodate variability in fuel moisture content. As of July 1, 1999, Blue Lake Power, LLC was required to have CEMs for carbon monoxide, nitrogen oxides and oxygen to better monitor emissions from the wood fired boiler operation. Because continuous emissions monitors (CEMS) are used to verify compliance with Best Available Control Technology emission limits, annual Relative Accuracy Test Audits (RATA) are required.

EQUIPMENT OPERATING SCENARIOS

Blue Lake Power, LLC typically operates at maximum capacity under a contract with SDG&E. Normal operation of the plant is to burn wood waste. A single 80 MMBtu/hour propane gas burner is used to supply heat for startups. Typically, the plant operates the turbine near its electrical generation design capacity of 11.7 MW supplying 10.2 MW to the grid as a base load rather than by dispatch.

DEFINITIONS

As used in this Permit, the terms shall have the meaning set out herein.

- a. **acfm**: actual cubic feet per minute
- b. **APCO**: the NCUAQMD Air Pollution Control Officer
- c. **Block 24 hour Average**: An averaging time used for determining compliance with an emission limit which is calculated as the arithmetic average of the hourly CEMs measurements for a given pollutant recorded over a Calendar Day
- d. **Calendar Day**: Any continuous 24-hour period beginning at 12:00 AM or 0000 hours
- e. **California Air Resources Board (CARB) Diesel Fuel**: Any diesel fuel that is commonly or commercially known, sold, or represented by the supplier as diesel fuel No. 1-D or No. 2-D, pursuant to the specifications in ASTM D975-81, "Standard Specification for Diesel Fuel Oils," as modified in May 1982, which is incorporated herein by reference, and that meets the specifications defined in Title 13 CCR, sections 2281, 2282 and 2284
- f. **CAM Plan**: Compliance Assurance Monitoring Plan, as defined in 40 CFR 64
- g. **CARB**: the California Air Resources Board
- h. **CEMS**: Continuous Emissions Monitoring System
- i. **CFR**: the Code of Federal Regulations
- j. **COMS**: Continuous Opacity Monitor
- k. **Corrected Concentration**: The concentration of any pollutant (generally NO_x, CO, ROC, or NH₃) corrected to a standard stack gas oxygen concentration. For emission point S-1, the standard stack gas oxygen concentration is 15% O₂ by volume on a dry basis
- l. **Diesel Particulate Matter (DPM)**: filterable particulate matter (PM) measured using EPA method 5.
- m. **Diesel ATCM**: the latest adoption of the Final Regulation Order of the Airborne Toxic Control Measure for Stationary Compression Ignition Engines, Section 93115, title 17, of the California Code of Regulations.
- n. **District**: North Coast Unified Air Quality Management
- o. **dscfm**: dry standard cubic feet per minute
- p. **Emergency**: operation arising from a sudden and reasonably unforeseeable event beyond the control of the Permittee (e.g., an act of God) which causes the excess of a limitation under this permit and requires immediate and corrective action. An "emergency" does not include noncompliance as a result of improperly designed or installed equipment, lack of preventative maintenance, careless or improper operation, or operator error.
- q. **EPA**: the United States Environmental Protection Agency
- r. **ESP**: Electrostatic Precipitator
- s. **Facility**: the site of the Blue Lake Power plant
- t. **Heat Input**: the energy (heat) input of the fuel combusted at the higher heating value (HHV) of the fuel
- u. **HHV**: Higher Heating Value
- v. **hr**: one hour – a standard measurement of time
- w. **H₂S**: Hydrogen Sulfide

- x. **H&SC:** California Health and Safety Code
- y. **lb:** pound – an English unit of measurement of weight and mass being equivalent to 7000 grains, 16 ounces, and 0.453 kilograms
- z. **Maintenance and Testing:** Operation of the reciprocating engines to (a) evaluate the ability of an engine or its supported equipment to perform during an emergency; or (b) facilitate the training of personnel on emergency activities; or (c) perform emissions testing, maintenance and operational testing, or safety-related testing as required by any government agency or by the manufacturer as a requirement of any law, regulation, rule, ordinance, standard, or contract
- aa. **MMBtu:** million British thermal units
- bb. **Natural Gas:** any mixture of gaseous hydrocarbons containing at least 80 percent methane by volume as determined by Standard Method ASTM D1945-64
- cc. **NCUAQMD:** North Coast Unified Air Quality Management District
- dd. **NFPA:** National Fire Protection Association
- ee. **Notice:** unless otherwise stated, shall be in writing, sent postage prepaid, to the APCO and include all information required. Notice shall be sent to the APCO at the following address: 2300 Myrtle Ave., Eureka, CA 95501
- ff. **O₂:** Oxygen
- gg. **Permittee:** the owner or operator identified on the Permit title page
- hh. **PM:** Particulate Matter
- ii. **ppmvd:** parts per million, volumetric dry
- jj. **Responsible Official:** person(s) who have direct authority or control to affect operations of the equipment authorized pursuant to this Permit, and who have the ability to certify that a source complies with all applicable federal requirements and federally enforceable permit conditions as generally defined in District Rule 101 §1.244
- kk. **ROC:** reactive organic carbon consistent with District Rule 101 §1.294 and HSC
- ll. **Quarter:** calendar quarter, consisting of the following Q1 - January through March; Q2 - April through June; Q3 - July through September; Q4 - October through December
- mm. **SO₂:** Sulfur Dioxide
- nn. **VEE:** Visible Emissions Evaluation
- oo. **Wood Waste:** Combustible wood waste from timber, sawmill residues, forest residues, chips, and vegetation, which is not treated with any chemicals or lead based paints.
- pp. **Year:** Any consecutive twelve-month period of time

FEDERALLY ENFORCEABLE GENERAL REQUIREMENTS

TITLE V PERMIT MODIFICATIONS AND RENEWAL

1. The Permittee shall submit to the Air Pollution Control Officer a completed Title V permit application for renewal no earlier than September 18, 2011 (18 months prior to the expiration date of the Title V permit) and no later than September 18, 2012 (6 months prior to the expiration date of the Title V permit). *[District Rule 502 §2.2]*
2. If modifications to the permit are necessary, the Permittee shall submit to the Air Pollution Control Officer a complete Title V permit application for either an Administrative, Minor, or Significant Title V permit modification. The application shall not be submitted prior to receiving any required preconstruction permit from the District. *[District Rule 502 §2.3]*
3. The Permittee shall submit to the Air Pollution Control Officer timely updates to the Title V application as new requirements become applicable to the source, and in no event less than twelve months from the date of rule applicability. *[District Rule 502 §2.1.3]*
4. The Permittee shall promptly provide additional information in writing to the Air Pollution Control Officer upon discovery of submittal of any inaccurate information as part of the application or as a supplement thereto; or of any additional relevant facts previously omitted which are needed for accurate analysis of the application and including inaccurate information known, or which should have been known or should be known, by the Permittee(s). *[District Rule 502 §5.1, 5.3, 5.4]*
5. Upon written request of the Air Pollution Control Officer, the Permittee shall supplement any complete application with additional information within the time frame specified by the Air Pollution Control Officer. *[District Rule 502 §5.2; 40 CFR 70.5(a)(2) and (b)]*
6. Knowing and willful misrepresentation of a material fact in the application for the Permit, or failure to comply with any condition of the Permit, or of the District Rules and Regulations, or any state or federal law, shall be grounds for revocation of this Permit. *[District Rule 102]*
7. When submitting an application for a permit pursuant to Regulation V, the Permittee shall include the following information: A certification by a responsible official of all reports and other documents submitted for permit application; compliance progress reports at least every 6 months for, and submitted no later than 30 days after, the periods January 1st through June 30th and July 1st through December 31st of each year; statements on compliance status with any applicable enhanced monitoring; and annual compliance plans, no later than January 30th of each year, which shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete. *[District Rule 504 §5.0]*

8. With the exception of acid rain units subject to Title IV of the Clean Air Act and solid waste incinerators subject to section 129(e) of the Clean Air Act, each permit issued pursuant to District Regulation 5 for any source shall include a condition for a fixed term not to exceed five years from the time of issuance. A permit to operate for an acid rain unit shall have a fixed permit term of five years. A permit to operate for a solid waste incinerator shall have a permit term of 12 years. However, the permit shall be reviewed at least every five years. *[District Rule 504 §11.0]*

COMPLIANCE

9. The Permittee shall comply with all conditions of the Title V permit. *[District Rule 504 §2.7]*
10. The Permittee may not assert or use as a defense, expressly, impliedly, or by operation of law or past practice, in any enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Title V permit. *[District Rule 504 §2.7.4]*
11. This Title V permit may be modified, revoked, reopened and reissued or terminated for cause. *[District Rule 503 §9.0]*
12. The Permittee shall furnish to the Air Pollution Control Officer, within 10 (ten) days of the request, any information that the Air Pollution Control Officer may request in writing to determine whether cause exists for modifying, revoking and reissuing, terminating this permit, or to determine compliance with this Title V permit. Upon request, the Permittee shall also furnish to the Air Pollution Control Officer copies of records required to be kept by conditions of this permit. For information claimed to be confidential, the Permittee may furnish such records along with a claim of confidentiality. *[District Rules 504 §2.7.6 and §5.0]*
13. Noncompliance with any federally enforceable requirement in this Title V permit is grounds for Title V permit termination, revocation and reissuance, modification, enforcement action, or denial of the Title V permit renewal application. *[District Rule 504(2.7.3)]*
14. A pending Title V permit action (e.g. a proposed permit revision) or notification of anticipated noncompliance does not stay any permit condition. *[District Rule 504 §2.7.5]*
15. This Title V permit does not convey any property rights of any sort or any exclusive privilege. *[District Rule 504 §2.7.2]*
16. Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the Air Pollution Control Officer or an authorized representative to perform all of the following:

- A. Enter the stationary source's premises where this source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Title V permit;
- C. Inspect at reasonable times, the stationary source, equipment (including monitoring and air pollution control equipment), practices and operations regulated or required under this Title V permit; and
- D. As authorized by District rules or by the Federal Clean Air Act, sample or monitor at reasonable times substances or parameters for the purpose of ensuring compliance with the Title V permit conditions or applicable federal requirements.
[District Rule 504 §2.5]

REPORTS AND RECORDKEEPING

17. Monitoring Reports

- A. The Permittee shall submit to the Air Pollution Control Officer at least once every six months, unless required more frequently by an applicable requirement, reports of all required monitoring set out in this Title V permit.
- B. The reporting periods for this permit shall be for the six month periods January 1st through June 30th and July 1st through December 31st. The reports shall be submitted by July 30th and January 30th of each year respectively.
- C. Any and all instances of deviations from Title V permit conditions must be clearly identified in such reports. All required reports must be certified by the responsible official and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete. *[District Rule 502 §11.0 and Rule 504 §5.0]*

18. Compliance Reports

- A. The Permittee shall submit to the Air Pollution Control Officer and to U.S. EPA (Air-3, U.S. EPA, Region IX) on an annual basis, unless required more frequently by additional applicable federal requirements, a certification of compliance by the Permittee with all terms and conditions contained in the Title V permit, including emission limitations, standards and work practices.
- B. The reporting period for this permit shall be January 1st through December 31st. The report shall be submitted by January 30th of each year.
- C. All required reports must be certified by the responsible official and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.
- D. The compliance certification shall include the following:
 - i. The identification of each term or condition of the Title V permit that is the basis of the certification.
 - ii. The method(s) used for determining the compliance status of the source, currently and over the reporting period, and whether such method(s) provides continuous or intermittent data.
 - iii. The status of compliance with the terms and conditions of the Title V permit for the period covered by the certification, based on the method designated in Section D (ii) of this condition.

- iv. Such other facts as the Air Pollution Control Officer may require in order to determine the compliance status of the source.
 - v. A method for monitoring the compliance of the stationary source with its emissions limitations, standards and work practices. *[District Rule 504 §10.0]*
19. The Permittee shall report within 24 hours of detection any deviation from a federally enforceable Title V permit condition. In order to fulfill the reporting requirement of this condition, the Permittee shall notify the Air Pollution Control Officer by telephone followed by a written statement within seven (7) days describing the nature of the deviation from the federally enforceable permit condition. *[District Rule 502 §11.0 and Rule 504 §5.0]*
20. All monitoring data and support information required by a federally enforceable applicable requirement must be kept by the stationary source for a period of 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the federally enforceable applicable requirement in the Title V permit. *[District Rule 502 §10.0 and Rule 504 §3.0]*

VISIBLE EMISSIONS

21. The Permittee shall not discharge into the atmosphere from any single source of emission, any air contaminant other than uncombined water vapor, for a period or periods aggregating more than three minutes in any one hour which is:
- A. As dark or darker in shade as that designated No. 2 (3-minute average), on the Ringelmann Chart, as published by the United States Bureau of Mines, or
 - B. Of such opacity as to obscure a human observer's view, or a certified calibrated in-stack opacity monitoring system to a degree equal to or greater than forty percent (40%) opacity. *[District Rule 104 §2.0 dated 5/19/05 SIP Approved 5/6/09]*

PARTICULATE MATTER

22. General Combustion Sources
- A. The Permittee shall not discharge particulate matter into the atmosphere from any combustion source in excess of 0.46 grams per standard cubic meter (0.20 grains per standard cubic foot) of exhaust gas, calculated to 12 percent carbon dioxide; or in excess of the limitations of NSPS (District Rule 104 §11.0), as applicable. *[District Rule 104 §3.1]*
 - B. Steam Generating Units
The Permittee shall not discharge particulate matter into the atmosphere from any steam generating unit, installed or modified after July 1, 1976, in excess of 0.23 grams per standard cubic meter (0.10 grains per standard cubic foot) of exhaust gas, calculated to 12 percent carbon dioxide; or in excess of the limitations of NSPS (District Rule 104 §11.0). *[District Rule 105-4 §3.2]*

C. Non-Combustion Sources

The Permittee shall not discharge particulate matter into the atmosphere from any non-combustion source in excess of 0.46 grams per actual cubic meter (0.20 grains per cubic foot) of exhaust gas or in total quantities in excess of the maximum allowable process weight rate as follows:

TABLE I

ALLOWABLE RATE OF EMISSION BASED ON PROCESS WEIGHT RATE					
Process Weight Rate		Rate of Emission	Process Weight Rate		Rate of Emission
Lb/Hr	Kg/Hr	Lb/Hr	Lb/Hr	Kg/Hr	Lb/Hr
100	45	0.55	6,000	2,720	8.6
200	92	0.88	7,000	3,380	9.5
400	183	1.4	8,000	3,680	10.4
600	275	1.83	9,000	4,134	11.2
800	377	2.22	10,000	4,540	12.0
1,000	454	2.58	12,000	5,460	13.6
1,500	681	3.38	16,000	7,260	16.5
2,000	920	4.1	18,000	8,220	17.9
2,500	1,147	4.76	20,000	9,070	19.2
3,000	1,362	5.38	30,000	13,600	25.2
3,500	1,690	5.96	40,000	18,100	30.5
4,000	1,840	6.52	50,000	22,700	35.4
5,000	2,300	7.58	60,000	27,200	40.0

Where the process weight per hour is between two listed figures, such process weight and maximum allowable particulate emission per hour shall be interpolated linearly. The total process weight of all similar process operations located at a single plant or of similar multiple plants located on a single premise, shall be used for determining the maximum allowable particulate emission from the combination of such operations.
[District Rule 104]

23. The Permittee shall not handle, transport or store or allow open storage of materials in such a manner which allows or has the potential to allow unnecessary amounts of particulate matter to become airborne. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including, but not limited to, the following:
- A. Covering open bodied trucks when used for transporting materials likely to give rise to airborne dust.
 - B. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Containment methods can be employed during sandblasting and other similar operations.

- C. Conduct agricultural practices in such a manner as to minimize the creation of airborne dust.
- D. The use of water or approved dust surfactants for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads or the clearing of land.
- E. The application of asphalt, oil, water or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which can give rise to airborne dusts.
- F. The paving of roadways and their maintenance in a clean condition.
- G. The prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means. *[District Rule 104 §4.0]*

OPEN BURNING

25. The Permittee shall not ignite or cause to be ignited or suffer, allow or maintain any open outdoor fire for the disposal of rubber, petroleum or plastic wastes, demolition debris, tires, tar paper, wood waste, asphalt shingles, linoleum, cloth, household garbage or other combustible refuse, or for metal salvage or burning of motor vehicle bodies. No other open burning shall occur without the owner, operator(s) or Permittee having first obtained a Coordinated Authorized Burn Permit from the Air Pollution Control Officer. *[District Rules 201 & 203]*

EQUIPMENT BREAKDOWNS

26. The Permittee shall comply with the emergency provisions contained in all applicable federal requirements.
- A. Within two working days of the emergency event, the Permittee shall notify the Air Pollution Control Officer with a description of the emergency and any mitigating or corrective actions taken. *[District Rule 502 §9.0]*
 - B. Within two weeks of an emergency event, the owner(s), operator(s) or the responsible official shall submit to the Air Pollution Control Officer a signed contemporaneous log or other relevant evidence which demonstrates that:
 - i. An emergency occurred.
 - ii. Identification of the cause(s) of the emergency.
 - iii. The facility was being properly operated at the time of the emergency.
 - iv. Identification of each and every step taken to minimize the emissions resulting from the emergency.
 - C. The Permittee has the burden of proof to establish that an emergency occurred in any enforcement proceeding.

TITLE VI REQUIREMENTS (OZONE DEPLETING SUBSTANCES)

27. The Permittee shall not allow or cause the opening of appliances containing CFCs for maintenance, service, repair, or disposal unless first complying with the required practices set out pursuant to 40 CFR 82.156. *[40 CFR 82 Subpart F]*

28. Equipment used during the maintenance, service, repair, or disposal of appliances containing CFCs shall comply with the standards for recycling and recovery equipment set out in and pursuant to 40 CFR 82.158. *[40 CFR 82 Subpart F]*
29. The Permittee and its contractors and agents performing maintenance, service, repair or disposal of appliances containing CFCs must be certified by an approved technician certification program set out in and pursuant to 40 CFR 82.161. *[40 CFR 82 Subpart F]*

ASBESTOS

30. The Permittee shall comply with the standards of 40 CFR 61 Subpart M which regulates demolition and renovation activities pertaining to asbestos materials.

PAYMENT OF FEES

31. The Permittee shall pay an annual permit fee and other fees as required in accordance with District Regulation IV, Rule 406, Title V Fees. Failure to pay these fees by the dates due will result in immediate suspension of this Title V Permit to Operate effective on the date the fees were due, and on notification by the Air Pollution Control Officer of such suspension. Operation without an effective Title V permit subjects the Permittee to potential enforcement action by the District and the U.S. EPA pursuant District Rules and Section 502(a) of the Clean Air Act as amended in 1990. *[District Rule 504 §12.0 and Rule 406]*

ACCIDENTAL RELEASES

32. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the Permittee Title V permit shall register and submit to the U.S. EPA the required data related to the risk management plan (RMP) for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r) (3) of the CAA as amended in 68.130. The list of substances, threshold quantities and accident prevention regulations promulgated under Part 68 do not limit in any way the general duty provisions under Section 112(r)(1). *[40 CFR Part 68]*
33. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the Permittee shall comply with the requirements of 40 CFR Part 68 no later than the latest of the following dates as provided in 40 CFR 68.10(a):
- A. June 21, 1999,
 - B. Three years after the date on which a regulated substance is first listed under 68.130, or
 - C. The date on which a regulated substance is first present above a threshold quantity in a process. *[40 CFR Part 68]*
34. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the Permittee(s) shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR Part 68. *[40 CFR Part 68]*

35. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the Permittee(s) shall annually certify compliance with all applicable requirements of Section 112(r) as part of the annual compliance certification. This annual compliance certification shall be submitted and received no later than January 30th of each year. *[40 CFR Part 68]*

CONDITIONAL TRANSFER OF OWNERSHIP

36. In the event of any changes in control or ownership of these facilities, this permit together with its terms and conditions shall be binding on all subsequent owners and operators. The Permittee shall notify the succeeding owner and operator of the existence of this permit and its conditions by letter, a copy of which shall be forwarded to the District, and which shall identify the exact effective date of the transfer of ownership.

The new owner(s) and operator(s) of this Title V source shall notify the Air Pollution Control Officer within 30 (thirty) days of the transfer of ownership and which notification shall include a certification by the responsible party that the Title V facility operations are to be operated in the same operational parameters as set out herein, and as before the transfer of ownership.

Any permit or written authorization issued pursuant herein shall not be transferable, by operation of law or otherwise, from one location to another, or from one person to another, unless such transfer occurs as a condition of this permit or as a modification to the permit and with written notification to the Air Pollution Control Officer within 30 (thirty) days of transfer of ownership. *[District Rule 102 §5.0]*

SEVERABILITY

37. If any term or condition of this permit, for any reason, be adjudged by a court of competent jurisdiction to be invalid, such judgment shall not affect or invalidate the remainder of this permit. These permit conditions are enforceable individually and severally. *[40 CFR 60.6(b)(5); District Rule 504 §2.8]*

PERMIT TERM

38. Title V permit expiration terminates the Permittee's right to operate the stationary sources itemized in this permit unless a timely and complete Title V permit application for renewal has been submitted in accordance with District Regulation V Rule 502 §2.2, in which case the existing Title V permit will remain in effect until the Title V permit renewal has been issued or denied. *[District Rule 504 §11.0]*

LOCAL ENFORCEABLE ONLY, GENERAL REQUIREMENTS

APPLICABILITY

39. The Permittee shall not cause or permit the construction or modification of any new source of air contaminants or modifications to an existing source, either minor or major, without first having obtained an Authority to Construct (ATC) permit from the Air Pollution Control Officer. [*District Rule 102*]
40. This permit is effective only upon payment of the permit fees set out in District Rules and Regulations. [*District Rule 400 §4.0*]

ADMINISTRATION

41. This Permit is issued pursuant to California Health and Safety Code § 42300. Commencement of any act or operation authorized by this Permit shall be conclusively deemed to be acceptance of all terms and conditions contained herein. [*District Rule 103 §5.0*]
42. The Permittee shall comply with all conditions of this permit. Any violation of any condition of this Permit is a violation of District Rules and Regulations, and California State Law. [*District Rule 105 §1.0*]
43. The Permit Conditions shall be liberally construed for the protection of the health, safety and welfare of the people of the District. [*District Rule 100 §6.3*]
44. The District Rules and Regulations may be superseded or revised by the District Board with notice as required by state law. It is Permittee's responsibility to stay current with Rules and Regulations governing its business. The Permittee is therefore expected to, and shall, comply with all applicable Rules and Regulations. [*District Rule 100 §6.0; Rule 105 §1.0*]
45. Permit requirements apply to the facility owner and/or operator(s) and any contractor(s) or subcontractor(s) performing any activity authorized under this Permit. Any person(s) including contractor(s), subcontractor(s), not in compliance with the applicable permit requirements are in violation of State and Local laws, and are subject to appropriate civil and criminal penalties. The facility owner and/or operator, and all contractor(s) or subcontractor(s) are strictly liable for the actions and violations of their employee(s). A violation committed by a contractor(s) or subcontractor(s) shall be considered a violation by the facility owner(s) and/or operator(s), and is also a violation by the contractor(s) and/or any subcontractor(s). [*District Rule 105 §5.0*]

46. Changes in plans, specifications, and other representations proposed in the application documents shall not be made if they will increase the discharge of emissions or cause a change in the method of control of emissions or in the character of emissions. Any proposed changes, regardless of emissions consequence, shall be submitted as a modification to this Permit. No modification shall be made prior to issuance of a permit revision for such modification. [*District Rule 102*]
47. Permittee shall not construct, erect, modify, operate, or use any equipment which conceals the emission of an air contaminant, which would otherwise constitute a violation of the limitations of this Permit. [*District Rule 104 §1.2*]
48. This Permit does not convey any property rights of any sort, or any exclusive privilege.
49. The "Right of Entry", as delineated in District Rule 109 §1.0 and California Health and Safety Code § 41510 of Division 26, shall apply at all times. Failure to grant immediate access to District, CARB, or other authorized personnel shall be grounds for permit suspension or revocation.
50. The APCO reserves the right to amend this Permit in order to ensure compliance with all applicable Federal, State and Local laws, Rules and Regulations or to mitigate or abate any public nuisance. Such amendments may include requirements for additional operating conditions, testing, data collection, reporting and other conditions deemed necessary by the APCO.
51. If any provision or condition of this Permit is found invalid by a court of competent jurisdiction, such finding shall not affect the validity or enforcement of the remaining provisions.
52. This Permit shall be posted in a conspicuous location at the site and shall be made available to District representatives upon request. [*District Rule 102 §8.0*]
53. The Permittee shall pay an annual permit fee and other fees as required in accordance with District Regulation IV. Failure to pay these fees will result in the forfeiture of this Permit. Operation without a permit subjects the source to potential enforcement action by the District. In the event of facility closure or change of ownership or responsibility, the new owner or operator shall be assessed and shall pay any unpaid fees. [*District Regulation IV - Fees*]
54. This Permit is not transferable from either one location to another, from one piece of equipment to another, or from one person to another, except as provided herein. In the event of any change in control or ownership of the subject facility, the Permittee shall notify the succeeding owner of this Permit and its conditions; and shall notify the District of the change in control or ownership within fifteen (15) days of that change. [*District Rule 400 §5.0*]

55. A request for Transfer of Ownership of this Permit shall be submitted to the APCO prior to commencing any operation of the subject equipment and/or operations by any owner(s) and/or operator(s) not otherwise identified in this Permit. Failure to file the Transfer of Ownership constitutes a separate and independent violation, and is cause for voiding this Permit. The burden of applying for a Transfer of Ownership is on the new owner(s) and/or operator(s). Any Permit transfer authorized pursuant to a transfer of ownership request shall contain the same conditions as this Permit. *[District Rule 400 §5.0]*
56. For purposes of this Permit, the terms identified in the Definition Section shall have the meaning set out in District Rule 101, unless otherwise defined in the definition section of this permit. In the event of any conflict between Rule 101 and the permit definitions, the definitions section of this permit shall prevail.

EMISSIONS & OPERATION

57. This Permit does not authorize the emission of air contaminants in excess of those allowed by the federal Clean Air Act, California Health and Safety Code or the Rules and Regulations of the District. This Permit shall not be considered as permission to violate existing laws, ordinances, regulation or statutes of other governmental agencies.
58. Permittee shall not discharge such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health or safety of any such persons or the public; or which cause or have a natural tendency to cause injury or damage to business or property. The opacity limitation is in effect at all times, including but not limited to startup, shutdown, and malfunction. *[H&SC §41700; District Rule 104 §1.1]*
59. The Permittee shall not discharge into the atmosphere from any source whatsoever any air contaminant which is in excess of twenty (20) percent opacity, calculated as a six (6) minute average. This limitation shall not apply to the sources identified in District Rule 104 §2.4. In no event shall emissions exceed forty (40) percent opacity for a period or periods aggregating more than three (3) minutes in any one hour. Compliance with the opacity limitation shall be determined using EPA Method 9 Visual Opacity or via a certified and properly calibrated continuous emission monitoring system. *[H&SC §41701; District Rule 104 §2.0]*
60. The handling, transporting, or open storage of material in such a manner which allows unnecessary amounts of particulate matter to become airborne shall not be permitted. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne. *[District Rule 104 §4.0]*
61. All equipment regulated by this Permit shall at all times be maintained in good working order, and shall be operated as efficiently as possible so as to ensure compliance with all applicable emission limits. For purposes of compliance with this requirement, good working order, efficient operation, and proper maintenance shall

mean the implementation of all protocols, procedures, and activities recommended by the device manufacturer or those required by this Permit.

RECORDS & TRAINING

62. The Permittee shall provide training and instruction to all affected contractor(s), subcontractor(s), and employee(s). Training shall include the identification of all the requirements contained within this Permit, and the appropriate method to be used to comply with the permit conditions. Training shall occur prior to any of the contractor(s), subcontractor(s), or employee(s) constructing or operating equipment authorized by this permit. Records documenting the persons receiving instruction and the instruction materials shall be made available to the APCO upon request. *[District Rule 105 §5.0]*
63. Permittee shall furnish to the APCO, within a reasonable time, any information that the District may request to determine compliance with this Permit or whether cause exists for modifying, revoking and reissuing, or terminating this Permit. Upon request, Permittee shall also furnish to the District copies of records required to be kept by this Permit. *[H&SC §42303; District Rule 103 §6.0]*
64. The Permittee shall record the following information in the event of an equipment breakdown or malfunction: date and time of event, event duration, description of event, identification of the cause of the event, identify what corrective measures were taken and if unsuccessful what additional measures should be taken in the future, and quantification of excess emissions released during the event. *[District Rule 105 §5.0]*

FEDERALLY ENFORCEABLE, EQUIPMENT SPECIFIC REQUIREMENTS

The information specified under this section is enforceable collectively and severally by the District, U.S. EPA, and the public.

AUTHORIZED EQUIPMENT

65. This permit authorizes the operation of the following equipment: *[District Rule 504 §2.1]*

Table 1.0 Authorized Emission Devices

Device S-1 Manufacturer Type Rating – Output Rating – Input Fuel Type Supplemental Burner Fuel Type Control Equipment Additional Equipment	Boiler (Steam Generator) Zurn Corporation Traveling grate stoker 105,000 pounds of steam/hour ≈11.7MW gross electricity generation capacity 185 MMBtu/hour Wood Waste Zurn Industries Model MJ-24, rated at 80 MMBtu/hour Propane Mechanical Multiclone Collector then ESP None
Device S-2 Model Size Year Heat Input Rate (HHV) SIC SCC	CI Diesel Engine – (Emergency Generator) Cummins, Model Big Cam 6-cylinder 335Hp (250kW) 1991 34.3 MMBtu/hr (12.25 gal/hr) 4911 20100102
Device S-3 Model Size Year Heat Input Rate (HHV) SIC SCC	CI Diesel Engine – (Emergency Boiler Feed Pump) Cummins, Model V-378 FA 137 Hp (100kW) 1986 19.18 MMBtu/hr (6.85 gal/hr) 4911 20100102

66. This permit authorizes the operation of the following control equipment: *[District Rule 504 §2.1]*

Table 2.0 Authorized Control Devices

<p>Device Manufacturer Model Pollutants Controlled Source Controlled</p>	<p>Mechanical Multiclone Collector Zurn Air Systems/Industries MTSA-262-9CYT-A-NRV-STD PM Device S-1 (Boiler)</p>
<p>Device Manufacturer Size Flow rate Max Inlet Loading Max Outlet Loading Design efficiency Opacity Guarantee Rating Pollutants controlled Source Controlled</p>	<p>Electrostatic Precipitator (ESP) Research Cottrell Corporation 21,002 square feet collection plate area with 2 transformer/rectifier fields 48,370 scfm 0.90 grains/dscf 0.018 grains/dscf (mfgr mass emission guarantee) 98 % efficient (mfgr efficiency guarantee) < 20% (mfgr outlet opacity guarantee) 55 KVA at 500 mA each PM – 10 Device S-1 (Boiler)</p>
<p>Device Manufacturer Description Operation Pollutants controlled Source Controlled</p>	<p>Forced Overfire Air System Zurn Air System Fan and piping which takes a portion of the air from the air heater that would otherwise be injected through the bottom of the combustion chamber and redirects it to the upper portion of the combustion chamber. Operated so as to optimize the combustion and minimize CO emissions. It is adjusted by the boiler operator based on monitoring of CO levels and visual observation of combustion. CO, NOx Device S-1 (Boiler)</p>

67. This permit authorizes the operation of the following monitoring equipment. The substitution with equivalent devices may occur if approval from the APCO is received prior to their installation and the devices are incorporated into the Facility's *Device Operational and Maintenance Plan*: [District Rule 504 §2.1]

Table 3.0 Authorized Monitoring Equipment

Device	CEMS
Manufacturer	Custom Instrumentation Services Corporation Continuous Emission Monitoring System
Model	System No. 10004050, Job No. 14162

Pollutant	Manufacturer/ Model	Part Number
CO	Siemens 6E	7MB2121-18G60-OAA1
NO _x	Rosemount 951 C	95130000
O ₂	Servomex 1440C	1440C-10-99-0110
Opacity	Durag D-R290	-

68. The exhaust stacks shall not be fitted with rain caps or any other similar device which would impede vertical exhaust flow.
69. The Permittee shall install and maintain a non-resettable hour meter with a minimum display capability of 9,999 hours upon the Emergency CI Diesel Engines authorized for use by this permit. [17 CCR §93115.10(e)]
70. The Permittee shall install Measurement Instrumentation, Sensors, and Recording Devices (MISRD) for the purpose of determining the amount of fuel combusted by Device S-1. The operating range, rangeability (turndown), accuracy, and specifications of the MISRD are subject to APCO review and approval. Only APCO approved equipment shall be used. [District Rule 103 §5.0]
71. The Permittee shall install points of access to the Emission Devices, Control Devices, and Continuous Emission Monitoring Devices such that source testing in accordance with the appropriate reference test methods can be performed. All points of access shall conform to the latest Cal-OSHA safety standards. For purposes of compliance with this part, appropriate test methods shall mean the test methods identified in the Testing and Compliance Monitoring Conditions section of this Permit and the collection of gas samples with a portable NO_x, CO, and O₂ analyzer. Sample collection ports shall be located in accordance with 40 CFR Part 60 Appendix A, and with the CARB document entitled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Emission Monitoring and Testing. [District Rule 103 §1.0]
72. The Permittee shall operate a continuous opacity monitoring system (COMS) meeting the standards set forth in 40 CFR 60.49b, at all times while fuel is being actively combusted in the Device S-1 (Boiler). The COMS shall determine the relative opacity of Device S-1 (Boiler) exhaust gases. The COMS shall be operated

in such a manner as to conform with the requirements of 40 CFR Part 60, Appendix B, Performance Specification. Calibration checks shall be performed in accordance with 40 CFR 60.13. *[40 CFR 60.49b and District Rule 103 §12.0]*

73. The Permittee shall operate a continuous emissions monitoring system (CEMS) meeting the standards set forth in 40 CFR 60.49b, at all times while fuel is being actively combusted in the Device S-1 (Boiler). The CEMS shall monitor levels of nitrogen monoxides, and oxygen in the Device S-1 (Boiler) exhaust gases. The CEMS shall be operated in such a manner as to conform with the requirements of 40 CFR Part 60, Appendix B, Performance Specification. Calibration checks shall be performed in accordance with 40 CFR 60.13. *[40 CFR 60.49b]*

EMISSION LIMITING CONDITIONS

74. The Permittee shall not discharge pollutants into the atmosphere from the Boiler S-1 in excess of the following emission limits:

A. Particulate Matter

- i. Particulate loading - The Permittee shall not discharge particulate matter into the atmosphere in excess of 0.04 pounds per million Btu of heat input per hour. *[40 CFR 60.44b(d) and District Rule 104 §12, ATC first issued 1/12/84 and last revised 9/24/91]*
- ii. Visible Emissions - The Permittee shall not cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. The opacity standard applies at all times except during periods of startup, shutdown, or malfunction. *[40 CFR 60.43b(f) and District Rule 104 §12, ATC first issued 1/12/84 and last revised 9/24/91]*

- B. Carbon Monoxide – The Permittee shall not discharge carbon monoxide (CO) into the atmosphere in excess of the 1.0 lbs/MMBtu. Compliance with this limit shall be determined on a block 24 hour average basis. *[District Rule 110 and ATC first issued 1/12/84 and last revised 9/24/91]*

- C. Nitrogen Oxides - The owner(s), operator(s) and Permittee(s) shall not discharge nitrogen oxides (as NO₂) into the atmosphere in excess of 0.15 lbs/MMBtu. Compliance with this limit shall be determined on a rolling twenty-four hour average basis. *[District Rule 110 and ATC first issued 1/12/84 and last revised 9/24/91, Title V revision **DATE TBD**]*

75. The Permittee shall not discharge pollutants into the atmosphere from the Device S-1 (Boiler) in excess of the emission limits listed in Table 4.0 below.

Table 4.0 Device S-1 (Boiler) - Emission Limitations

Pollutant	Emission Rate		
	Lbs/Hour	Lbs/Day	Tons/Year
CO	555.0	4,440.0	809.6
NOx	83.3	665.0	120.5
PM2.5	7.4	177.6	32.4
PM10	7.4	177.6	32.4
VOC	4.6	111.0	20.3
SOx	3.1	75.4	13.8

76. The Permittee shall not discharge pollutants from the total of the facility's permitted emission units in excess of the limits shown in Table 5.0 below during any calendar year. The total facility annual emission limits apply as well as any individual device emission limits listed in this permit.

Table 5.0 Facility Annual Emission Limits

Pollutant	Emission Rate (Tons/Year)
CO	809.6
NOx	120.8
PM	32.4
VOC	20.3
SOx	13.8

77. The Permittee shall not discharge particulate matter into the atmosphere from any combustion source in excess of 0.20 grains per cubic foot of dry gas calculated to 12 percent CO₂ at standard conditions. [*District Rule 104 §3.1*]

PRODUCTION LIMITATIONS

78. The Permittee shall not operate Device S-1 (Boiler) such that Propane Gas combustion exceeds:

- Ten percent (10%) of the annual heat input capacity factor for a calendar year; or
- 1.78 million gallons of propane gas burned per calendar year. [*40 CFR 60.44b(d)*]

79. The Permittee shall not operate Device S-1 (Boiler) such that steam production exceeds:
- A. 105,000 pounds per hour on a monthly average basis; and
 - B. 919.8 million pounds of steam per year. [*District Rule 110*]

OPERATIONAL CONDITIONS

80. The Permittee shall only combust Wood Wastes and Propane Gas in Device S-1 (Boiler).
81. The Permittee shall continuously operate and maintain the MISRD used to determine the amount of fuel combusted in Device S-1. The MISRD shall be operated and maintained in accordance with manufacturer's specifications, and in accordance with the Device Operational and Maintenance Plan prepared pursuant to Condition #91.
82. The Permittee shall only fire the Device S-1 (Boiler) while all of the exhaust is routed through mechanical Multiclones identified in the Authorized Equipment Section of this permit. The Multiclones shall be operated and maintained in accordance with the Permittee's Device Operational Plan, and Device Maintenance and Replacement Plan.
83. The Permittee shall operate the Electrostatic Precipitator (ESP) in accordance with this Section at all times when the excess O₂ level is below 8%, and any amount of wood waste is being combusted in the Device S-1 (Boiler).
84. The Permittee shall continuously maintain the Electrostatic Precipitator (ESP) in accordance with manufacturer's recommendations, Device Operational and Maintenance Plans, and the requirements of this section which shall include but not be limited to the following:
- A. Inspection of each ESP rapper at least once per day. The inspection shall consist of a visual inspection of the rapper control settings and status lights. Individual rappers found to be out of service shall be identified and appropriate repairs performed on the rappers.
 - i. Permittee shall repair rappers that fail due to temporary short circuit or circuit overload that blow a fuse within 2 working days of identification;
 - ii. Permittee shall repair working rappers that fail due to an electric/electronic part within 30 days of identification; and
 - iii. These repair dates may be adjusted upon approval of the APCO.
 - B. Inspection of the ESP on a daily basis, according to the Device Operational and Maintenance Plans required to be developed by this Permit. The Inspection shall include, but not be limited to, a daily inspection and recording of each cell voltage, amperage and spark rate.

- C. Maintain the primary and secondary current of each Transformer Rectifier (TR) set within a range, in amps, as determined from operational data obtained or as stated in the Device Operational Plan. An alarm shall be set in such a manner as to indicate current excursions from the established range.
 - D. Maintain the primary and secondary voltage of each Transformer Rectifier (TR) set within a range, in volts, as determined from operational data obtained or as stated in the Device Operational Plan. An alarm shall be set in such a manner as to indicate voltage excursions from the established range.
 - E. Maintain the spark rate in each ESP field within a range in sparks/minute as stated in the Device Operational Plan. An alarm shall be set in such a manner as to indicate spark rate excursions from the established range.
 - F. The ESP shall be maintained leak-free.
85. The Permittee shall inspect the ESP Rapper Control Panel to record the status, where appropriate action must be taken in the event a fault is observed in accordance with Permittee's Device Operational and Maintenance Plan.
86. There shall be no fugitive dust emissions from any transfer points of the boiler where wood waste ash is collected. All waste material collected from the ESP shall be kept in an enclosed container.
87. The Permittee shall operate the ESP automatic rapping system to maximize collection efficiency and minimize particulate re-entrainment, according to the manufacturer's specifications and as identified in the Device Operational and Maintenance Plan.
88. The Permittee shall maintain all ESP electric fields and corona power levels to maximize collection efficiency and minimize particulate re-entrainment, according to the manufacturer's specifications and as identified in the Device Operational and Maintenance Plan.
89. The Permittee shall maintain all ducting, housings, fans, chambers, and exhaust ducts in a leak free state during all times of operation. Emissions of exhaust gases visible to the unaided human eye shall not occur at any point upstream of the final exhaust stack discharge point.
90. The Permittee shall implement and maintain a written *Startup, Shutdown, and Malfunction Plan* as described in as described in 40 CFR 63.6(e)(3) which contains specific procedures for maintaining the authorized equipment, associated control devices, associated CEMS, sensors, measuring devices, during periods of startup, shutdown, and malfunction. The plan must clearly describe the startup and shutdown sequence procedure for each unit. The Plan shall also include a specific

program of corrective actions to be implemented in the event of a malfunction in either the process or control systems. The Plan shall be submitted to the APCO within thirty (30) days from the date this permit is issued. Modifications to the Plan are subject to APCO approval and the Permittee shall not operate the authorized equipment and their associated control devices unless an APCO approved Startup, Shutdown, and Malfunction Plan is in effect.

91. The Permittee shall develop, implement and maintain a written *Device Operational Plan* that contains specific procedures for operating the authorized equipment, associated control devices, associated CEMS, sensors, and measuring devices. This plan shall be consistent with the requirements of this Permit, and all local, state and federal laws, rules, and regulations. The plan shall include, but not be limited to, daily system integrity inspections and the recording of operational parameters. The Plan shall be submitted to the APCO within thirty (30) days from the date this permit is issued. Modifications to the Plan are subject to APCO approval and the Permittee shall not operate the authorized equipment and their associated control devices unless an APCO approved Device Operational Plan is in effect.
92. The Permittee shall develop, implement and maintain a written *Device Maintenance & Replacement Plan* that contains specific procedures for equipment maintenance and identifies replacement intervals for components of the authorized equipment, associated control devices, associated CEMS, sensors, and measuring devices. The Plan shall be submitted to the APCO within thirty (30) days from the date this permit is issued. The Plan is subject to APCO approval. Modifications to the Plan are subject to APCO approval and the Permittee shall not operate the authorized equipment and their associated control devices unless an APCO approved Device Maintenance & Replacement Plan is in effect.
93. On Devices S-2 and S-3, the Permittee shall perform the following maintenance and replacement activities at or before the specified frequency: [40 CFR Part 63.66039(a)]
 - A. Change oil and filter every 500 hours of operation or annually, whichever comes first unless an alternative interval is approved by the APCO;
 - B. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and
 - C. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.
94. The APCO may approve alternative oil change intervals for Devices S-2 and S-3 pursuant to 40 CFR Part 63.6625(i). The alternate intervals shall be identified in the Device Operational and Maintenance Plan required by the Operational Conditions section of this permit. If the Permittee elects to demonstrate compliance utilizing an oil analysis program, the parameters, condemning limits, and recordkeeping and reporting requirements must also be incorporated into the Device Operational and Maintenance Plan for each engine.

REPORTING & RECORDKEEPING

95. The Permittee shall continuously maintain the following records for the most recent five year period, and shall provide them to the District upon request.

Table 6.0 Facility Wide – Recordkeeping

Frequency	Information to be Recorded
At all times	A. Data on the operation of the Device S-1 (Boiler) which shall include the parameters of temperature, pressure, and steam produced. B. Records of opacity data from averages of samples collected every 15 seconds and then averaged over periods of 6 minute increments. [40 CFR 60.49(b)(f)]
Upon occurrence	C. For all authorized devices, each startup, shutdown, and malfunction event. D. Any periods of malfunction of the air pollution control equipment. E. Any periods during which the COMS or CEMS were inoperative. F. Performance testing, evaluations, calibration checks, adjustments, and maintenance of continuous emission monitors. G. Violations of any permit condition, rule, or regulation.
Hourly	H. Electrostatic Precipitator Transformer Rectifier (TR) set current. I. Electrostatic Precipitator Transformer Rectifier (TR) set voltage. J. Electrostatic Precipitator spark rate for each section. K. Hourly averages of carbon monoxide, nitrogen oxides and oxygen. L. The amount of steam produced by the Device S-1 (Boiler) each hour. M. Status of the ESP Rapper Control Panel.
Daily	N. The number of hours Device S-1 was operated. O. Daily 24 hour averages in lbs/MMBtu of carbon monoxide, nitrogen oxides and oxygen. P. The amount of propane gas combusted by Device S-1 in gallons and Btu's. Q. The amount of wood waste combusted in tons and Btu. R. ESP Maintenance, inspections, and repairs log, including: i. Identification of the equipment ii. Date of inspection iii. Corrective action taken iv. Identification of the individual performing the inspection
Monthly	S. Emissions of carbon monoxide, nitrogen oxides, particulate matter, volatile organic compounds, and sulfur oxides in tons. T. The amount of steam produced by Device S-1 in pounds. U. The amount of propane combusted in Device S-1 in gallons and Btu's. V. Quantity of Wood Waste Combusted in tons. W. Moisture content of Wood Waste Combusted as a percentage of weight.
Annually	X. Emissions of carbon monoxide, nitrogen oxides, particulate matter, volatile organic compounds, and sulfur oxides in tons. Y. The amount of steam produced by Device S-1 in pounds. Z. The amount of propane combusted in Device S-1 in gallons and Btu's. AA. Quantity of Wood Waste Combusted in tons. BB. Moisture content of Wood Waste Combusted as a percentage of weight.
Biennially	CC. Description of any corrective action taken as part of the performance tune-up DD. Type and amount of fuel used over the 12 months prior to tune-up

96. The Permittee shall submit the following reports to the District according to the interval listed.

Table 7.0 Facility Wide - Information To Be Reported

Frequency	Information to be Reported
Upon occurrence	A. All occurrences of excess emissions in accordance with the timing requirements of District Rule 105 §5.0 Equipment Breakdown and Rule 502 §9.0 Emergency Events.
Monthly - by the 15th of the following month	B. Identify any deviation from permit requirements, including a summary of those deviations attributable to breakdowns reported in accordance with District Rule 105 §5.0. C. The daily 24 hour averages in lbs/MMBtu for carbon monoxide, nitrogen oxides and oxygen. D. The hourly average steam production averaged over the calendar month. E. Amount of propane gas combusted by the Device S-1 for the year in gallons and Btu's. F. Calculation of the annual capacity factor for propane gas on a 12 month rolling average basis. [40 CFR 60.49(b)(d)] G. Quantity of Wood Waste Combusted in tons. H. Moisture content of Wood Waste Combusted as a percentage of weight.
Yearly – by January 30th of the following year	I. Number of operating days for the Device S-1 for the year. J. Amount of steam produced by the Device S-1 for year in pounds. K. Amount of propane combusted by the Device S-1 for the year in gallons and Btu's. L. Amount of PM, CO, NOx, and emissions in tons. M. Quantity of Wood Waste Combusted in tons corrected to 12% moisture content. N. Activity of Insignificant Emission Units Listed in Table 12.0.

97. The Permittee shall maintain a Breakdown log that describes the breakdown or malfunction, includes the date and time of the malfunction, the cause of the malfunction, corrective actions taken to minimize emissions and the date and time when the malfunction was corrected.

98. The Permittee shall immediately record the following information when an event occurs where emissions from the equipment listed under the Authorized Equipment section of this permit are in excess of any limits incorporated within this permit, or in violation of District Rules. A written report of each incident shall be forwarded to the District within 96 hours of when the incident began. The report shall include the following information:

- A. Date and time of the excess emission event;
- B. Duration of the excess emission event;
- C. Description of the condition or circumstance causing or contributing to the excess emission event;
- D. Emission unit or control device or monitor affected;
- E. Estimation of the quantity and type of pollutants released;
- F. Description of corrective action taken; and
- G. Actions taken to prevent reoccurrence of excess emission event.

[Reference District Regulations, Appendix B, section 2.3]

99. The Permittee shall provide to the APCO, a completed "Compliance Certification" form signed by the Facility's Responsible Official which certifies the compliance status of the facility twice per calendar year. The compliance certification form must be submitted to the District according to the following schedule: The semiannual certification (covering quarters 1 and 2) must be submitted prior to July 31st of the reporting year, and the annual certification (covering quarters 1, 2, 3, and 4) prior to March 1st of the following calendar year. *[District Rule 504 §10.0]*

100. For each Quarter, the Permittee shall submit a written report to the APCO detailing the following items for the operation of the CEMS. The report shall conform to the requirements of District Rules and Regulations Appendix B, § 2.2, and shall be submitted within 30 days of the end of the quarter.

- A. Time intervals;
- B. Date and magnitude of excess emissions;
- C. Nature and cause of excess (if known);
- D. Corrective actions taken and preventive measures adopted;
- E. Averaging period used for data reporting shall correspond to the averaging period for each respective emission standard;
- F. Applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and
- G. A negative declaration when no excess emissions occurred.

[District Regulations, Appendix B §2.2]

101. Within 180 days after this permit is renewed, the Permittee shall prepare and submit a comprehensive facility wide emission inventory plan for all criteria pollutants and toxic air contaminants emitted from the facility. The plan shall identify the protocols, procedures, and content necessary to prepare an emission inventory report in accordance with the most recent version of the CAPCOA / CARB reference document *Emission Inventory Criteria Guidelines*. The plan shall be updated as necessary on an annual basis. An emission inventory report prepared pursuant to the plan shall be prepared annually and submitted to the District no later than March 1st of the calendar year following the year the emissions were discharged. The inventory plan and reports are subject to APCO review and approval. *[H&SC 42303; District Rule 103 §6.0]*

TESTING & COMPLIANCE MONITORING

102. The Permittee shall demonstrate compliance with the Device S-1 emission limits identified in this permit using the following methods once every calendar year. If reported values for a pollutant are less than 50% of the permitted limits, the APCO may waive the source testing requirement for that pollutant for the following calendar year. The Permittee shall cause an independent party which is CARB certified to conduct the source tests. All compliance tests shall be conducted at an operating capacity of ninety-five percent (95%) or greater of the permitted production capacity as stated in this permit, or under conditions determined by the APCO to most challenge the emission control equipment. Testing shall be conducted while greater than ninety-five (95%) of the heat input to the device is derived from wood waste. Alternative testing procedures may be used if advance approval is obtained from the APCO. *[District Rule 504 §4.0]*

- A. Particulate Matter:
 - i. CARB Method 5
 - ii. The Permittee shall be required to have particulate matter emissions from the Device S-1 (Boiler) tested once per calendar year.
- B. Visible Emissions:
 - i. The Permittee shall operate at all times and maintain a continuous opacity monitoring system (COMS). *[40 CFR 60.48b(a)]*
 - ii. The COMS shall be operated in conformance with 40 CFR 60, Appendix B, Performance Specification 1. *[40 CFR 60.49b(b)]*
- C. Carbon Monoxide, Nitrogen Oxides and Oxygen:
 - i. The Permittee shall operate at all times and maintain a continuous emissions monitoring system (CEMS) for the determination of carbon monoxide, nitrogen oxides and oxygen from the Device S-1 (Boiler).
 - ii. The CEMS shall be operated in conformance with 40 CFR 60, Appendix B, Performance Specifications and Appendix F, Quality Assurance Procedures.
 - iii. Monitoring shall be conducted in accordance with 40 CFR 60.13.
- D. Annual Relative Accuracy Test Audit (RATA)
 - i. In order to verify compliance with emissions limits, the Permittee shall perform an annual Relative Accuracy Test Audit (RATA) for Carbon Monoxide, Nitrogen Oxides and Oxygen on the CEMS.

103. The Permittee shall report facility operating conditions, including the status of process and control systems, which occurred during the performance tests. The Permittee shall record and include in the final report the following operational parameters taken during compliance testing: *[District Rule 504 §4.0 and Rule 103 §6.0]*

- A. Device S-1(Boiler):
 - i. Boiler steam rate (pounds/hour),
 - ii. Wood fuel moisture content (%),
 - iii. Percent overfire air (%),
 - iv. Fuel input (MMBtu/hour), and
 - v. Natural gas input (MMBtu/hour)
- B. Electrostatic Precipitator (ESP):

- i. Primary and secondary amperage of the Transformer Rectifier (TR) set
- ii. Primary and secondary voltage of the Transformer Rectifier (TR) set
- iii. Spark rate in each ESP field

104. The Permittee shall notify the APCO at least thirty (30) days prior to a compliance test date and allow a representative of the District to be present at the test.
105. The Permittee shall provide for the District's approval, a written compliance test protocol, at least thirty (30) days prior to the anticipated test date. The protocol shall describe the test methods to be used and shall describe any applicable data reduction procedures.
106. Source test results shall be summarized in a written report and submitted to the APCO directly from the independent source testing firm on the same day, at the same time, and in the same manner as submitted to Permittee. Source test results shall be submitted to the District no later than 60 days after the testing is completed.
107. The Permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F.
108. The NO_x and O₂ monitors shall meet the performance specification requirements of 40 CFR, Part 51 Appendix P; and Part 60, Appendix B.
109. The cycling times for the CEMS shall be those specified in 40 CFR Part 51, Appendix P, Sections 3.4, 3.41, and 3.42.
110. Gas calibration mixtures shall meet the specifications in 40 CFR Part 51, appendix P, Section 3.3; and Part 60, Appendix B, Section 2.11.
111. Data shall be reduced according to the procedures established in 40 CFR Part 51, Appendix P, sections 5.0 through 5.3.3.
112. Relative accuracy test audits (RATAs) shall be performed on each CEMS at least once every twelve months, in accordance with the requirements of 40 CFR 60, Appendix F. Cylinder Gas Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with Appendix F. The APCO shall be notified in writing at least 30 days in advance of the scheduled date of the RATAs. RATA reports shall be submitted along with quarterly compliance reports to the APCO within 60 days after the testing was performed.
113. The Permittee shall conduct a biennial performance tune-up of Device S-1 pursuant to 40 CFR §63.11223(b). [40 CFR §63.11223(a)]

LOCAL ENFORCEABLE ONLY, EQUIPMENT SPECIFIC REQUIREMENTS

EMISSION LIMITING CONDITIONS

114. The Permittee shall not discharge pollutants into the atmosphere from Device S-2 (Emergency Generator) in excess of the limits shown in Table 5.1 below. Emissions generated during an emergency event, and during maintenance and testing shall not contribute towards the hourly or annual emission limits.

Table 5.1 Device S-2 (Emergency Generator) Emission Limits

Pollutant	Emission Rate	
	Lbs/Hr	Tons/Year
PM	7.37E-01	7.37E-03
NOx	1.39E+01	1.39E-01
CO	2.38E+00	2.38E-02
TOC	8.27E-01	8.27E-03
SOx	1.8E-03	1.8E-05

115. The Permittee shall not discharge pollutants into the atmosphere from Device S-3 (Fire Pump) in excess of the following limits shown in Table 6.0 below. Emissions generated during an emergency event and during maintenance and testing shall not contribute towards the hourly or annual emission limits.

Table 6.0 Device S-3 (Boiler Feed-water Pump) Emission Limits

Pollutant	Emission Rate	
	Lbs/Hr	Tons/Year
PM	3.75E-01	3.75E-03
NOx	3.875E+00	3.875E-02
CO	8.35E-01	8.35E-03
TOC	3.09E+00	3.09E-02
SOx	7.0E-04	7.0E-6

OPERATIONAL CONDITIONS

116. The Permittee shall only power Devices S-2 & S-3 using one of the following fuels:
- A. CARB Diesel Fuel, or
 - B. An alternative diesel fuel that meets the requirements of the Verification Procedure (as codified in CCR Title 13 Sections 2700-2710), or
 - C. CARB Diesel Fuel used with fuel additives that meets the requirements of the Verification Procedure (as codified in CCR Title 13 Sections 2700-2710), or
 - D. Any combination of A) through C) above.
117. The Devices S-2 and S-3 are authorized the following maximum allowable annual hours of operation as listed below [17 CCR §931156(b)] :

Table 9.0 Devices S-2 & S-3 - Hours of Operation

Emergency Use	Non-Emergency Use	
	Emission Testing to show compliance	Maintenance & Testing
Not Limited by the ATCM	Not Limited by the ATCM	20 hours/year

118. The Permittee shall only operate Devices S-2 & S-3 in accordance with the most recent amendment of Title 17, California Code of Regulations section 93115.6(b)(3)(A), ATCM for Stationary CI Engines.

REPORTING & RECORDKEEPING

119. The Permittee shall record the operational parameters for Devices S-2 and S-3 as listed below and shall report the information required to be kept annually to the District as part of the annual compliance certification. The information shall be recorded and reported separately for each device. [17 CCR §93115.10(g)]

Table 10.0 Devices S-2 & S-3 - Recordkeeping

Frequency	Information to be Recorded & Reported
Upon Occurrence	A. Time and duration for each engine startup B. Maintenance and testing hours of operation C. Emergency use hours of operation D. Initial start-up testing hours E. Hours of operation for any emission testing F. Hours of operation to comply with requirements of NFPA 25 G. For each bulk delivery of diesel fuel received, certification from the supplier that the diesel fuel meets or exceeds CARB Diesel Fuel specifications
Annually	H. Number of Hours Operated for Maintenance & Testing Purposes I. Total Number of Hours Operated J. Total Number of Gallons Combusted

INSIGNIFICANT EMISSIONS UNITS

120. The following systems are considered insignificant emissions units and are not subject to equipment specific requirements. However, these units are required to comply with all applicable Local Enforceable Only general requirements. [District Rule 102 §4.0]

Table 12.0 Insignificant Emissions Units

Exempt Equipment	SCC	Equipment Description	Reportable Units
Cooling Tower	38500101	Induced Draft	Gallons of Water Cooled
Fuel Dispensing Facility	40600651	Diesel fuel pumps	Gallons of Fuel Dispensed
Fuel Storage	40400316	Aboveground Diesel tanks	Gallons of Fuel Throughput
Lube Oil Tanks	40400313	55 gallon drums (used oil)	Gallons of oil Throughput
Oil/Water Separator	50300713	Oil/Water Separator	Gallons of Water Treated
Confined Solvent and Paint Use	40200110	General Operations (facility wide)	Gallons of Solvent/Paint Used
Welding Shop	30900500	Welding Shop	Pounds of Welding Rod Used

AUTHORIZING SIGNATURE

**NORTH COAST UNIFIED
AIR QUALITY
MANAGEMENT DISTRICT**

2300 MYRTLE AVENUE
EUREKA, CALIFORNIA 95501

PHONE (707) 443-3093
FAX (707) 443-3099

DRAFT

STATIONARY SOURCE SUMMARY

(FORM V-A1)

DISTRICT: NORTH COAST UNIFIED AQMD

COMPANY NAME:

➤ DISTRICT USE ONLY ◀

District ID:

Application #:

Application Received:

Application Filing Fee:

Application Deemed Complete:

I. FACILITY IDENTIFICATION

1. Facility Name: _____
2. Four digit SIC Code: _____ EPA Plant ID: _____
3. Parent Company (if different than Facility Name): _____
4. Mailing Address: _____
5. Street Address or Source Location: _____
6. UTM Coordinates (if required): _____
7. Source located within: 50 miles of the state line ☐ Yes ☐ No
50 miles of a Native American Nation ☐ Yes ☐ No ☐ Not Applicable
8. Type of Organization: ☐ Corporation ☐ Sole Ownership ☐ Government ☐ Partnership ☐ Utility Company
9. Legal Owner's Name: _____
10. Owner's Agent Name (if any): _____
11. Responsible Official: _____
12. Plant Site Manager/Contact: _____ Telephone #: _____
13. Type of facility: _____
14. General description of processes/products: _____

15. Does your facility store, or otherwise handle, greater than threshold quantities of any substance on the Section 112(r) List of Substances and their Thresholds (see attachment A)? ☐ Yes ☐ No
16. Is a Federal Risk Management Plan [pursuant to Section 112(r)] required? ☐ Not Applicable ☐ Yes ☐ No
(If yes, attach verification that Risk Management Plan is registered with appropriate agency or description of status of Risk Management Plan submittal.)

STATIONARY SOURCE SUMMARY

(FORM V-A2)

DISTRICT: NORTH COAST UNIFIED AQMD

➤ DISTRICT USE ONLY ◀

DISTRICT ID:

COMPANY NAME:

FACILITY NAME:

II. TYPE OF PERMIT ACTION

	CURRENT PERMIT (permit number)	EXPIRATION (date)
<input type="checkbox"/> Initial Title V Application		
<input type="checkbox"/> Permit Renewal		
<input type="checkbox"/> Significant Permit Modification		
<input type="checkbox"/> Minor Permit Modification		
<input type="checkbox"/> Administrative Amendment		

III. DESCRIPTION OF PERMIT ACTION

1. Does the permit action requested involve: a: ☐ Portable Source ☐ Voluntary Emissions Caps
☐ Acid Rain Source ☐ Alternative Operating Scenarios
☐ Source Subject to MACT Requirements [Section 112]

b: ☐ None of the options in 1.a. are applicable

2. Is source operating under Compliance Schedule? ☐ Yes ☐ No

3. For permit modifications, provide a general description of the proposed permit modification:

TOTAL STATIONARY SOURCE EMISSIONS

(FORM V-B)

DISTRICT: NORTH COAST UNIFIED AQMD	➤ DISTRICT USE ONLY ◀ DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

I. TOTAL STATIONARY SOURCE EMISSIONS

Provide a brief description of operating scenario :

[illegible]

* Emissions for all pollutants that the source is major for and all regulated air pollutants must be reported. See Attachment A.

COMBUSTION EMISSION UNIT

(FORM V-C1)

DISTRICT: NORTH COAST UNIFIED AQMD

> DISTRICT USE ONLY <

DISTRICT ID:

COMPANY NAME:

FACILITY NAME:

I. PERMIT NUMBER: _____

II. EMISSION UNIT DESCRIPTION

1. Equipment type: _____
2. Equipment description: _____
3. Equipment make, model & serial number: _____
4. Maximum design process rate or maximum power input/output: _____
5. Primary use: _____
6. Burner(s) design, operating temperature and capacity: _____
7. Control device(s) type and description (if any): _____

III. OPERATIONAL INFORMATION

1. Operating schedule: _____ (hours/day) _____ (hours/year)
2. Exhaust gas properties (temperature, SCFM, %H₂O, %O₂ or %CO₂, % excess air):

3. Fuel specifications:

FUEL TYPE (name)	ANNUAL USAGE (c.f./yr, lb/yr, gal/yr)	HEATING VALUE (BTU/lb or BTU/gal)	SULFUR (%)	NITROGEN (%)
Wood	96,820 dry tons/yr	8,350 Btu/lb	< 0.1	0.10%
Propane	1.78 million gal/yr	90,000 Btu/Gal	none	none

COMBUSTION EMISSION UNIT

(FORM V-C2)

DISTRICT: NORTH COAST UNIFIED AQMD	➤ DISTRICT USE ONLY <
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

4. Unit emissions:

CRITERIA POLLUTANT EMISSIONS (tons per year)					
POLLUTANTS	CO	NOx	PM-10	SOx	VOCs
A. Emissions	810.3	121.545	32.412	20.2575	13.7751
B. Pre-modification Emissions ¹					
C. Emission Change ²					
D. Emission Limit ³					
OTHER REGULATED AIR POLLUTANT EMISSIONS (tons per year)					
POLLUTANTS					
A. Emissions	See Attachment VC-2 Boiler Wood Fuel				
B. Pre-Modification Emissions ¹					
C. Emission Change ²					
D. Emission Limit ³					

¹ For permit modifications only; emissions prior to project modification.

² Difference between Pre-Modification Emissions (Section B.) and Emissions (Section A.).

³ For voluntary emissions cap and emission limits [i.e. expressed as parts per million (ppm) corrected for dilution air, pounds per hour (lbs/hr), pounds per million BTU (lb/MMBTU, etc.) required by any applicable requirement.

COMBUSTION EMISSION UNIT (FORM V-C1)

DISTRICT: NORTH COAST UNIFIED AQMD	➤ DISTRICT USE ONLY ◀
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

I. PERMIT NUMBER:

II. EMISSION UNIT DESCRIPTION

1. Equipment type: _____
2. Equipment description: _____
3. Equipment make, model & serial number: _____
4. Maximum design process rate or maximum power input/output: _____
5. Primary use: _____
6. Burner(s) design, operating temperature and capacity: _____
7. Control device(s) type and description (if any): _____

III. OPERATIONAL INFORMATION

1. Operating schedule: _____ (hours/day) _____ (hours/year)
2. Exhaust gas properties (temperature, SCFM, %H₂O, %O₂ or %CO₂, % excess air): _____

3. Fuel specifications:

[illegible]

COMBUSTION EMISSION UNIT

(FORM V-C2)

DISTRICT: NORTH COAST UNIFIED AQMD	➤ DISTRICT USE ONLY <
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

4. Unit emissions:

CRITERIA POLLUTANT EMISSIONS (tons per year)					
POLLUTANTS	CO	NOx	PM-10	SOx	TOC
A. Emissions	0.55945	2.5962	0.18425	0.17168	0.21055
B. Pre-modification Emissions ¹					
C. Emission Change ²					
D. Emission Limit ³					
OTHER REGULATED AIR POLLUTANT EMISSIONS (tons per year)					
POLLUTANTS					
A. Emissions	See Attachment V-C2 Gen Diesel				
B. Pre-Modification Emissions ¹					
C. Emission Change ²					
D. Emission Limit ³					

¹ For permit modifications only; emissions prior to project modification.

² Difference between Pre-Modification Emissions (Section B.) and Emissions (Section A.).

³ For voluntary emissions cap and emission limits [i.e. expressed as parts per million (ppm) corrected for dilution air, pounds per hour (lbs/hr), pounds per million BTU (lb/MMBTU, etc.) required by any applicable requirement.

COMBUSTION EMISSION UNIT (FORM V-C1)

DISTRICT: NORTH COAST UNIFIED AQMD	➤ DISTRICT USE ONLY ◀ DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

I. PERMIT NUMBER:

II. EMISSION UNIT DESCRIPTION

1. Equipment type: _____
2. Equipment description: _____
3. Equipment make, model & serial number: _____
4. Maximum design process rate or maximum power input/output: _____
5. Primary use: _____
6. Burner(s) design, operating temperature and capacity: _____
7. Control device(s) type and description (if any): _____

III. OPERATIONAL INFORMATION

1. Operating schedule: _____ (hours/day) _____ (hours/year)
2. Exhaust gas properties (temperature, SCFM, %H₂O, %O₂ or %CO₂, % excess air): _____

3. Fuel specifications:

[illegible]

COMBUSTION EMISSION UNIT

(FORM V-C2)

DISTRICT: NORTH COAST UNIFIED AQMD	➤ DISTRICT USE ONLY <
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

4. Unit emissions:

CRITERIA POLLUTANT EMISSIONS (tons per year)					
POLLUTANTS	CO	NOx	PM-10	SOx	TOC
A. Emissions	0.2087	0.9687	0.06875	0.06406	0.07856
B. Pre-modification Emissions ¹					
C. Emission Change ²					
D. Emission Limit ³					
OTHER REGULATED AIR POLLUTANT EMISSIONS (tons per year)					
POLLUTANTS					
A. Emissions	See Attachment V-C2 BFW Diesel				
B. Pre-Modification Emissions ¹					
C. Emission Change ²					
D. Emission Limit ³					

¹ For permit modifications only; emissions prior to project modification.

² Difference between Pre-Modification Emissions (Section B.) and Emissions (Section A.).

³ For voluntary emissions cap and emission limits [i.e. expressed as parts per million (ppm) corrected for dilution air, pounds per hour (lbs/hr), pounds per million BTU (lb/MMBTU, etc.) required by any applicable requirement.

GENERAL EMISSION UNIT

(FORM V-F1)

DISTRICT: NORTH COAST UNIFIED AQMD	> DISTRICT USE ONLY < DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

I. PERMIT NUMBER: _____

II. EQUIPMENT DESCRIPTION

1. General process description: _____
2. Equipment type: _____
3. Equipment description: _____
4. Equipment make, model & serial number: _____
5. Maximum design process rate or throughput: _____
6. Control device(s) type and description (if any): _____

III. OPERATIONAL INFORMATION

1. Operating schedule: _____ (hours/day) _____ (hours/year)
2. Exhaust gas flow rate: _____ SCFM @%H₂O _____
3. Raw products products used and finished products produced:

RAW PRODUCT USED (name)	CONSUMPTION (lbs/hr, gal/hr, etc.)	PRODUCTS PRODUCED (name)	PRODUCTION (lbs/hr, gal/hr, etc.)
Water	10,560 gal/hr (evaporate rate)	Water vapor	NA

GENERAL EMISSION UNIT

(FORM V-F2)

DISTRICT: NORTH COAST UNIFIED AQMD	➤ DISTRICT USE ONLY ◀
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

IV. UNIT EMISSIONS:

CRITERIA POLLUTANT EMISSIONS (tons per year)					
POLLUTANTS	PM-10				
A. Emissions	.5382				
B. Pre-modification Emissions¹					
C. Emission Change²					
D. Emission Limit³					

OTHER REGULATED AIR POLLUTANT EMISSIONS (tons per year)					
POLLUTANTS					
A. Emissions					
B. Pre-modification Emissions¹					
C. Emission Change²					
D. Emission Limit³					

¹ For permit modifications only; emissions prior to project modification.

² Difference between Pre-Modification Emissions (Section B.) and Emissions (Section A.).

³ For voluntary emissions cap and emission limits [i.e. expressed as parts per million (ppm) corrected for dilution air, pounds per hour (lbs/hr), pounds per million BTU (lb/MMBTU, etc.) required by any applicable requirement.

EMISSION CONTROL UNIT

(FORM V-G1)

DISTRICT: NORTH COAST UNIFIED AQMD	> DISTRICT USE ONLY <
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

I. PERMIT NUMBER: _____

II. EQUIPMENT DESCRIPTION

- General process description: _____
- Equipment type: _____
- Equipment description: _____
- Equipment make, model & serial number: _____
- Emission unit(s) served by this equipment: _____
- Maximum design or rated capacity: _____

III. EQUIPMENT DESIGN INFORMATION

- Exhaust gas: Temperature: _____ (F) Flow Rate: _____ (SCFM)
Moisture: _____ (%) Oxygen: _____ (%)
CO₂: _____ (%)
- General: Manufacturer: _____ Pressure Drop: _____ (in-Hg)
Inlet Temp.: _____ (F) Outlet Temp.: _____ (F)
- Catalyst data: Catalyst Type/Material: _____
Catalyst Life: _____ (years) Volume: _____ (ft³)
Space Velocity: _____ (Ft³/Ft) NH₃ inj. Rate: _____ (gal/hr)
NH₃ Inj. Temp.: _____ (F)
- Baghouse data: Design: ☒ Positive Pressure ☐ Negative Pressure
Cleaning Method: _____
Fabric Material: _____
Flow Rate: _____ (SCFM) Air/Cloth Ratio: _____
- ESP data: Number of fields: _____ Cleaning Method: _____
Power Input: _____
- Scrubber data: Type/design: _____ Sorbent Type: _____
- Other Control Devices (include appropriate design information): _____

EMISSION CONTROL UNIT (FORM V-G2)

DISTRICT: NORTH COAST UNIFIED AQMD	➤ DISTRICT USE ONLY ◀
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

IV. OPERATIONAL INFORMATION

1. Operating schedule: _____ (hours/day) _____ (hours/year)
2. Raw products used by control device: _____
3. Operating information: _____

[illegible]

EXEMPT EQUIPMENT (FORM V-H)

DISTRICT: NORTH COAST UNIFIED AQMD	➤ DISTRICT USE ONLY <
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

I. EQUIPMENT EXEMPT FROM DISTRICT PERMIT REQUIREMENTS

[illegible]

COMPLIANCE PLAN (FORM V-I1)

DISTRICT: NORTH COAST UNIFIED AQMD	➤ DISTRICT USE ONLY ◀
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

I. PROCEDURE FOR USING FORM XXX-I

This form shall be submitted as part of the Title V Application. The Responsible Official shall identify the applicable federal requirement(s) to which the source is subject. In the Compliance Plan (Form V-12), a Responsible Official shall identify whether the source identified in the Title V Application will operate in compliance with all applicable federal requirements.

II. APPLICABLE FEDERAL REQUIREMENTS

[illegible]

¹ If exempt from applicable federal requirement, attach explanation for exemption.

² Indicate the date during the permit term that the applicable federal requirement will become effective.

COMPLIANCE PLAN CERTIFICATION

COMPLIANCE PLAN (FORM V-I1)

DISTRICT: NORTH COAST UNIFIED AQMD	➤ DISTRICT USE ONLY ◀
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

I. PROCEDURE FOR USING FORM XXX-I

This form shall be submitted as part of the Title V Application. The Responsible Official shall identify the applicable federal requirement(s) to which the source is subject. In the Compliance Plan (Form V-12), a Responsible Official shall identify whether the source identified in the Title V Application will operate in compliance with all applicable federal requirements.

II. APPLICABLE FEDERAL REQUIREMENTS

[illegible]

¹ If exempt from applicable federal requirement, attach explanation for exemption.

² Indicate the date during the permit term that the applicable federal requirement will become effective.

COMPLIANCE PLAN CERTIFICATION

COMPLIANCE PLAN (FORM V-I1)

DISTRICT: NORTH COAST UNIFIED AQMD	➤ DISTRICT USE ONLY ◀
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

I. PROCEDURE FOR USING FORM XXX-I

This form shall be submitted as part of the Title V Application. The Responsible Official shall identify the applicable federal requirement(s) to which the source is subject. In the Compliance Plan (Form V-12), a Responsible Official shall identify whether the source identified in the Title V Application will operate in compliance with all applicable federal requirements.

II. APPLICABLE FEDERAL REQUIREMENTS

[illegible]

¹ If exempt from applicable federal requirement, attach explanation for exemption.

² Indicate the date during the permit term that the applicable federal requirement will become effective.

COMPLIANCE PLAN CERTIFICATION

COMPLIANCE PLAN

(FORM V-12)

DISTRICT: NORTH COAST UNIFIED AQMD	> DISTRICT USE ONLY < DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

III. COMPLIANCE CERTIFICATION

Under penalty of perjury, I certify the following:

- ☐ Based on information and belief formed after reasonable inquiry, the source identified in this application will continue to comply with the applicable federal requirement(s) with which the source is in compliance identified in form V-II;
- ☐ Based on information and belief formed after reasonable inquiry, the source identified in this application will comply with the future-effective applicable federal requirement(s) identified in form V-II, on a timely basis¹;
- ☐ Based on information and belief formed after reasonable inquiry, the source identified in this application is not in compliance with the applicable federal requirement(s), identified in form V-II, and I have attached a compliance plan schedule.²

Signature of Responsible Official

Date

1. Unless a more detailed schedule is expressly required by the applicable federal requirement.
2. At the time of expected permit issuance, if the source expects to be out of compliance with an applicable federal requirement, the applicant is required to provide a compliance schedule with this application, with the following exception. A source which is operating under a variance that is effective for less than 90 days need not submit a Compliance Schedule. For sources operating under a variance, which is in effect for more than 90 days, the Compliance Schedule is the schedule that was approved as part of the variance granted by the hearing board.

The compliance schedule shall contain a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with this applicable federal requirement. For sources operating under a variance, the compliance schedule is part of the variance granted by the hearing board. The compliance schedule shall resemble, and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject. For sources not operating under a variance, consult the Air Pollution Control Officer regarding procedures for obtaining a compliance schedule.

(FORM V-J1)

DISTRICT: NORTH COAST UNIFIED AQMD	➤ DISTRICT USE ONLY <
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

I. CERTIFICATION STATUS

1. Indicate the dates the applicant intends to submit the **COMPLIANCE CERTIFICATION REPORT** to the district during the entire permit term. The district federal operating permits rule requires the applicant to submit this report at least annually.

2. For sources required to have a schedule of compliance to remedy a violation, indicate the dates the applicant intends to submit **CERTIFIED PROGRESS REPORTS** to the district during the permit term. The district federal operating permits rule requires the applicant to submit this report at least semiannually.

3. Describe the compliance status of the source with respect to applicable enhanced monitoring, and compliance certification requirements of Section 114(a)(3) of the Clean Air Act:

COMPLIANCE PLAN CERTIFICATION

(FORM V-J2)

DISTRICT: NORTH COAST UNIFIED AQMD	> DISTRICT USE ONLY <
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

II. CERTIFICATION INFORMATION

EMISSION UNIT or
PERMIT NUMBER: _____

APPLICABLE
FEDERAL
REQUIREMENT: _____

METHOD	DESCRIPTION OR REFERENCE METHOD
Monitoring	
Reporting	
Record Keeping	
Test Methods	

EMISSION UNIT or
PERMIT NUMBER: _____

APPLICABLE
FEDERAL
REQUIREMENT: _____

METHOD	DESCRIPTION OR REFERENCE METHOD
Monitoring	
Reporting	
Record Keeping	
Test Methods	

COMPLIANCE PLAN CERTIFICATION

(FORM V-J2)

DISTRICT: NORTH COAST UNIFIED AQMD	> DISTRICT USE ONLY <
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

II. CERTIFICATION INFORMATION

EMISSION UNIT or
PERMIT NUMBER: _____

APPLICABLE
FEDERAL
REQUIREMENT: _____

METHOD	DESCRIPTION OR REFERENCE METHOD
Monitoring	
Reporting	
Record Keeping	
Test Methods	

EMISSION UNIT or
PERMIT NUMBER: _____

APPLICABLE
FEDERAL
REQUIREMENT: _____

METHOD	DESCRIPTION OR REFERENCE METHOD
Monitoring	
Reporting	
Record Keeping	
Test Methods	

COMPLIANCE PLAN CERTIFICATION

(FORM V-J2)

DISTRICT: NORTH COAST UNIFIED AQMD	> DISTRICT USE ONLY <
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

II. CERTIFICATION INFORMATION

EMISSION UNIT or
PERMIT NUMBER: _____

APPLICABLE
FEDERAL
REQUIREMENT: _____

METHOD	DESCRIPTION OR REFERENCE METHOD
Monitoring	
Reporting	
Record Keeping	
Test Methods	

EMISSION UNIT or
PERMIT NUMBER: _____

APPLICABLE
FEDERAL
REQUIREMENT: _____

METHOD	DESCRIPTION OR REFERENCE METHOD
Monitoring	
Reporting	
Record Keeping	
Test Methods	

CERTIFICATION STATEMENT

(FORM V-M)

DISTRICT: NORTH COAST UNIFIED AQMD	> DISTRICT USE ONLY <
	DISTRICT ID:
COMPANY NAME:	FACILITY NAME:

Identify, by checking off below, the forms and attachments that are part of your application. If the application contains forms or attachments that are not identified below, please identify these attachments in the blank space provided below. Review the instructions if you are unsure of the forms and attachments that need to be included in a complete application.

Forms included with application

- ☐ Stationary Source Summary Form
- ☐ Total Stationary Source Emission Form
- ☐ Compliance Plan Form
- ☐ Compliance Plan Certification Form
- ☐ Exempt Equipment Form
- ☐ Certification Statement Form

List other forms or attachments

[] check here if more forms listed on back

Attachments included with application

- ☐ Description of Operating Scenarios
- ☐ Sample emission calculations
- ☐ Fugitive emission estimates
- ☐ List of Applicable requirements
- ☐ Discussion of units out of compliance with applicable federal requirements and, if required, submit a schedule of Compliance
- ☐ Facility schematic showing emission points
- ☐ NSR Permit
- ☐ PSD Permit
- ☐ Enhanced monitoring protocols
- ☐ Risk management verification per 112(r)

I certify under penalty of law, based on information and belief formed after reasonable inquiry, that the information contained in this application, composed of the forms and attachments identified above, are true, accurate, and complete.

I certify that I am the responsible official, as defined in (title of district Title V permitting rule).

Signature of Responsible Official _____ Date _____

Print Name of Responsible Official _____

Title of Responsible Official and Company Name _____

Tons/yr Pollutant	Boiler - Wood	Boiler -Propane	Gen Diesel	Gen BFW Pump	Cooling Tower	Site Total
PM-10	32.412	0.534	0.184	0.0688	1.941	35.1398
CO	810.3	2.848	0.559	0.209	0	813.916
NOx	121.545	16.91	2.596	0.969	0	142.02
SOx	20.24	0.016	0.172	0.064	0	20.492
VOCs	13.78	0	0.211	0.079	0	14.07

Unit	Boiler, wood fuel
Heat Input, MMBTU/hr	185
Operating Hours/year	8760

Pollutant	Uncontrolled	Control Efficiency	Controlled	Emissions (lb/hr)	Emissions (lb/yr)	Emissions (tons/yr)
	Emission Factor (lb/MMBTU)		Emission Factor (lb/MMBTU)			
NOx	0.15	0	0.15	27.75	243090	121.545
CO	1	0	1	185	1620600	810.3
SOx	0.025	0	0.025	4.625	40515	20.2575
PM-10	0.04	0	0.04	7.4	64824	32.412
VOCs	0.017	0	0.017	3.145	27550.2	13.7751
Inorganic Compounds						
Antimony	0.0000079	98	0.000000158	0.00002923	0.2560548	0.000128027
Arsenic	0.000022	98	0.00000044	8.14E-05	0.713064	0.000356532
Barium	0.00017	98	0.0000034	0.000629	5.51004	0.00275502
Beryllium	0.0000011	98	0.000000022	0.00000407	0.0356532	1.78266E-05
Cadmium	0.0000041	98	8.2E-08	0.00001517	0.1328892	6.64446E-05
Chlorine	0.00079	0	0.00079	0.14615	1280.274	0.640137
Chromium Total	0.000021	98	0.00000042	7.77E-05	0.680652	0.000340326
Chromium hexavalent	0.0000035	98	7E-08	0.00001295	0.113442	0.000056721
Cobalt	0.0000065	98	0.00000013	0.00002405	0.210678	0.000105339
Copper	0.000049	98	9.8E-07	0.0001813	1.588188	0.000794094
Hydrogen Chloride	0.019	0	0.019	3.515	30791.4	15.3957
Iron Oxide	0.00099	98	0.0000198	0.003663	32.08788	0.01604394
Lead	0.000048	98	9.6E-07	0.0001776	1.555776	0.000777888
Manganese	0.0016	98	0.000032	0.00592	51.8592	0.0259296
Mercury	0.0000035	0	0.0000035	0.0006475	5.6721	0.00283605
Molybdenum Trioxide	0.0000021	98	0.000000042	7.77E-06	0.0680652	3.40326E-05
Nickel	0.000033	98	6.6E-07	0.0001221	1.069596	0.000534798
Phosphorus	0.000027	98	0.00000054	9.99E-05	0.875124	0.000437562
Potassium	0.039	98	0.00078	0.1443	1264.068	0.632034
Selenium	0.0000028	0	0.0000028	0.000518	4.53768	0.00226884
Silver	0.0017	98	0.000034	0.00629	55.1004	0.0275502
Sodium	0.00036	98	7.2E-06	0.001332	11.66832	0.00583416
Strontium	0.00001	98	0.0000002	0.000037	0.32412	0.00016206
Tin	0.000023	98	0.00000046	8.51E-05	0.745476	0.000372738
Titanium	0.00002	98	0.0000004	7.4E-05	0.64824	0.00032412
Vanadium	0.00000098	98	1.96E-08	0.000003626	0.03176376	1.58819E-05
Yttrium	0.0000003	98	0.000000006	0.00000111	0.0097236	4.8618E-06
Zinc	0.00042	98	8.4E-06	0.001554	13.61304	0.00680652
Total						16.76242458
Organic Compounds						
2-Methylnaphthalene	2.28E-08	0	2.28E-08	0.000004218	0.03694968	1.84748E-05
Acenaphthene	2.58E-08	0	2.58E-08	0.000004773	0.04181148	2.09057E-05
Acenaphthylene	1.51E-08	0	1.51E-08	2.7935E-06	0.02447106	1.22355E-05
Acetaldehyde	0.0000715	0	0.0000715	0.0132275	115.8729	0.05793645
Acrolein	0.00000363	0	0.00000363	0.00067155	5.882778	0.002941389
Anthracene	2.13E-08	0	2.13E-08	3.9405E-06	0.03451878	1.72594E-05
Benzene	0.0000103	0	0.0000103	0.0019055	16.69218	0.00834609
Benzo(a)anthracene	7.64E-10	0	7.64E-10	1.4134E-07	0.001238138	6.19069E-07
Benzo(a)pyrene	7.64E-10	0	7.64E-10	1.4134E-07	0.001238138	6.19069E-07
Benzo(b)flouranthene	1.46E-09	0	1.46E-09	2.701E-07	0.002366076	1.18304E-06
Benzo(e)pyrene	2.84E-09	0	2.84E-09	5.254E-07	0.004602504	2.30125E-06
Benzo(g,h,i)perylene	9.1E-10	0	9.1E-10	1.6835E-07	0.001474746	7.37373E-07
Benzo(k)flouranthene	7.64E-10	0	7.64E-10	1.4134E-07	0.001238138	6.19069E-07
Chrysene	5.63E-09	0	5.63E-09	1.04155E-06	0.009123978	4.56199E-06
Dibenzo(a,h)anthracene	7.64E-10	0	7.64E-10	1.4134E-07	0.001238138	6.19069E-07
Dioxin: 4D 2378	4.69E-13	0	4.69E-13	8.6765E-11	7.60061E-07	3.80031E-10
Dioxin: 4D Total	8.13E-11	0	8.13E-11	1.50405E-08	0.000131755	6.58774E-08
Dioxin: 5D 12378	1.09E-12	0	1.09E-12	2.0165E-10	1.76645E-06	8.83227E-10

Dioxin: 5D Total	6.9E-11	0	6.9E-11	1.2765E-08	0.000111821	5.59107E-08
Dioxin: 6D 123478	1.78E-12	0	1.78E-12	3.293E-10	2.88467E-06	1.44233E-09
Dioxin: 6D 123678	2.6E-12	0	2.6E-12	4.81E-10	4.21356E-06	2.10678E-09
Dioxin: 6D 123789	1.83E-12	0	1.83E-12	3.3855E-10	2.9657E-06	1.48285E-09
Dioxin: 6D Total	1.89E-10	0	1.89E-10	3.4965E-08	0.000306293	1.53147E-07
Dioxin: 7D 1234678	3.99E-11	0	3.99E-11	7.3815E-09	6.46619E-05	3.2331E-08
Dioxin: 7D Total	7.5E-11	0	7.5E-11	1.3875E-08	0.000121545	6.07725E-08
Dioxin: 8D	5.46E-10	0	5.46E-10	1.0101E-07	0.000884848	4.42424E-07
Fluoranthene	6.85E-08	0	6.85E-08	1.26725E-05	0.1110111	5.55056E-05
Fluorene	4.72E-08	0	4.72E-08	0.000008732	0.07649232	3.82462E-05
Formaldehyde	0.0000454	0	0.0000454	0.008399	73.57524	0.03678762
Furan: 4F 2378	2.6E-12	0	2.6E-12	4.81E-10	4.21356E-06	2.10678E-09
Furan: 4F Total	6.77E-11	0	6.77E-11	1.25245E-08	0.000109715	5.48573E-08
Furan: 5F 12378	1.56E-12	0	1.56E-12	2.886E-10	2.52814E-06	1.26407E-09
Furan: 5F 23478	1.78E-12	0	1.78E-12	3.293E-10	2.88467E-06	1.44233E-09
Furan: 5F Total	2.56E-11	0	2.56E-11	4.736E-09	4.14874E-05	2.07437E-08
Furan: 6F 123478	1.86E-12	0	1.86E-12	3.441E-10	3.01432E-06	1.50716E-09
Furan: 6F 123678	1.89E-12	0	1.89E-12	3.4965E-10	3.06293E-06	1.53147E-09
Furan: 6F 123789	5.78E-13	0	5.78E-13	1.0693E-10	9.36707E-07	4.68353E-10
Furan: 6F 234678	2.18E-12	0	2.18E-12	4.033E-10	3.53291E-06	1.76645E-09
Furan: 6F Total	1.85E-11	0	1.85E-11	3.4225E-09	2.99811E-05	1.49906E-08
Furan: 7F 1234678	1.38E-11	0	1.38E-11	2.553E-09	2.23643E-05	1.11821E-08
Furan: 7F 1234789	1.13E-12	0	1.13E-12	2.0905E-10	1.83128E-06	9.15639E-10
Furan: 7F Total	2.6E-11	0	2.6E-11	4.81E-09	4.21356E-05	2.10678E-08
Furan: 8F	3.42E-11	0	3.42E-11	6.327E-09	5.54245E-05	2.77123E-08
Indenol(1,2,3c,d)pyrene	1.58E-09	0	1.58E-09	2.923E-07	0.002560548	1.28027E-06
Napthalene	0.00000158	0	0.00000158	0.0002923	2.560548	0.001280274
PCB: Decachlorinated biphenyls	2.24E-11	0	2.24E-11	4.144E-09	3.63014E-05	1.81507E-08
PCB: Dichlorinated biphenyls	6.09E-10	0	6.09E-10	1.12665E-07	0.000986945	4.93473E-07
PCB: Heptachlorinated biphenyls	8.82E-11	0	8.82E-11	1.6317E-08	0.000142937	7.14685E-08
PCB: Hexachlorinated biphenyls	3.57E-10	0	3.57E-10	6.6045E-08	0.000578554	2.89277E-07
PCB: Monochlorinated biphenyls	2.7E-10	0	2.7E-10	4.995E-08	0.000437562	2.18781E-07
PCB: Nonachlorinated biphenyls	7.22E-12	0	7.22E-12	1.3357E-09	1.17007E-05	5.85037E-09
PCB: Octachlorinated biphenyls	1.22E-11	0	1.22E-11	2.257E-09	1.97713E-05	9.88566E-09
PCB: Pentachlorinated biphenyls	7.99E-10	0	7.99E-10	1.47815E-07	0.001294859	6.4743E-07
PCB: Tetrachlorinated biphenyls	1.98E-09	0	1.98E-09	3.663E-07	0.003208788	1.60439E-06
PCB: Trichlorinated biphenyls	2.19E-09	0	2.19E-09	4.0515E-07	0.003549114	1.77456E-06
Subtotal PCBs	6.34E-09	0	6.34E-09	1.1729E-06	0.010274604	5.1373E-06
Perylene	7.64E-10	0	7.64E-10	1.4134E-07	0.001238138	6.19069E-07
Phenanthrene	0.000000144	0	0.000000144	0.00002664	0.2333664	0.000116683
Pyrene	3.81E-08	0	3.81E-08	7.0485E-06	0.06174486	3.08724E-05
Toluene	0.0000118	0	0.0000118	0.002183	19.12308	0.00956154
Vinyl Chloride	0.0000109	0	0.0000109	0.0020165	17.66454	0.00883227
Xylene	0.0000111	0	0.0000111	0.0020535	17.98866	0.00899433
Total						0.135014554

Unit	Boiler - Propane Burner
Heat Input, MMBTU/hr	80
Propane Use, gal/yr	1780000

Pollutant	Emissions Factor (lb/1000 gal)	Emissions (lb/yr)	Emissions (tons/yr)
NOx	19	33820	16.91
CO	3.2	5696	2.848
SOx	0.018	32.04	0.01602
PM-10	0.6	1068	0.534
VOCs	0	0	0
Benezene	0.000522	0.92916	0.00046458
Formaldehyde	0.001107	1.97046	0.00098523
Benzo(a)pyrene	0.000009	0.01602	0.00000801
Napthalene	0.000027	0.04806	0.00002403
Acetyldehyde	0.000279	0.49662	0.00024831
Acrolein	0.000243	0.43254	0.00021627
Propylene	0.0477	84.906	0.042453
Toluene	0.02385	42.453	0.0212265
Xylenes	0.001773	3.15594	0.00157797
Ethyl Benzene	0.000621	1.10538	0.00055269
Hexane	0.000414	0.73692	0.00036846
Total			0.06812505

Unit:	Diesel Emergency Generator
Rating, Hp:	335
Fuel Consumption, Gal/hr:	17.1
Fuel HHV, BTU/gal	137030
Operating Hours/year	500
Heat Input, MMBTU/hr	2.343213

Pollutant	Emission Factor (lb/hp-hr)	Emission Factor (lb/MMBTU)	Emissions (lb/hr)	Emissions (lb/yr)	Emissions (tons/yr)
NOx	0.031		10.385	5192.5	2.59625
CO	0.00668		2.2378	1118.9	0.55945
SOx	0.00205		0.68675	343.375	0.1716875
PM-10	0.0022		0.737	368.5	0.18425
CO2	1.15		385.25	192625	96.3125
Aldehydes	0.000463		0.155105	77.5525	0.0387763
TOC	0.0025141		0.8422235	421.11175	0.2105559
Benzene		0.000933	0.002186218	1.09310886	0.0005466
Toluene		0.000409	0.000958374	0.47918706	0.0002396
Xylenes		0.000285	0.000667816	0.33390785	0.000167
Propylene		0.00258	0.00604549	3.02274477	0.0015114
1,3-Butadiene		0.0000391	9.16196E-05	0.04580981	2.29E-05
Formaldehyde		0.00118	0.002764991	1.38249567	0.0006912
Acetaldehyde		0.000767	0.001797244	0.89862219	0.0004493
Acrolein		0.0000925	0.000216747	0.1083736	5.419E-05
Napthalene		0.0000848	0.000198704	0.09935223	4.968E-05

Unit:	Diesel Boiler Feedwater Pump
Rating, Hp:	125
Fuel Consumption, Gal/hr:	6.4
Fuel HHV, BTU/gal	137030
Operating Hours/year	500
Heat Input, MMBTU/hr	0.876992

Pollutant	Emission Factor (lb/hp-hr)	Emission Factor (lb/MMBTU)	Emissions (lb/hr)	Emissions (lb/yr)	Emissions (tons/yr)
NOx	0.031		3.875	1937.5	0.96875
CO	0.00668		0.835	417.5	0.20875
SOx	0.00205		0.25625	128.125	0.0640625
PM-10	0.0022		0.275	137.5	0.06875
CO2	1.15		143.75	71875	35.9375
Aldehydes	0.000463		0.057875	28.9375	0.0144688
TOC	0.0025141		0.3142625	157.13125	0.0785656
Benzene		0.000933	0.0008182	0.40911677	0.0002046
Toluene		0.000409	0.0003587	0.17934486	8.967E-05
Xylenes		0.000285	0.0002499	0.12497136	6.249E-05
Propylene		0.00258	0.0022626	1.13131968	0.0005657
1,3-Butadiene		0.0000391	3.429E-05	0.01714519	8.573E-06
Formaldehyde		0.00118	0.0010349	0.51742528	0.0002587
Acetaldehyde		0.000767	0.0006727	0.33632643	0.0001682
Acrolein		0.0000925	8.112E-05	0.04056088	2.028E-05
Napthalene		0.0000848	7.437E-05	0.03718446	1.859E-05

Blue Lake Power, LLC
1615 Continental Street, Suite 100
Redding, CA 96001
(530) 246-2455
FAX: (530) 246-7008

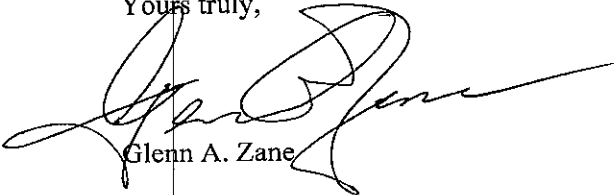
March 11, 2013

Mr. Jason Davis
North Coast Unified AQMD
2300 Myrtle Avenue
Eureka CA, 95501

Dear Jason:

Please find attached completed and signed Form V-K1 in support of the BLP renewal application for its Title V permit.

Yours truly,



Glenn A. Zane

CERTIFICATION REPORT (FORM V-K1)

DISTRICT: NORTH COAST UNIFIED AQMD	DISTRICT USE ONLY
COMPANY NAME: BLP LLC	DISTRICT ID:
	FACILITY NAME: BLP

I. FACILITY INFORMATION

1. Company Name: Blue Lake Power LLC
2. Facility Name (if different than Company Name): _____
3. Mailing Address: P. O. Box 1158
4. Street Address or Source Location: 200 Taylor Way, Blue Lake, CA 95525
5. Facility Permit Number: NCU 097-12

II. GENERAL INFORMATION

1. Reporting period (specify dates): 1/1/2013 - 3/10/2013
2. Due date for submittal of report: NA
3. Type of submittal: ☐ Monitoring Report (complete Section III below)
☐ Compliance Schedule Progress Report (complete Section IV of Form V-K2)
☒ Compliance Certification (complete Section V of Form V-K2)

III. MONITORING REPORT INFORMATION

1. Were deviations from monitoring requirements encountered during the reporting period?
☒ No ☐ Yes (If Yes, complete Form V-K3)

CERTIFICATION REPORT (FORM V-K2)

DISTRICT: NORTH COAST UNIFIED AQMD	DISTRICT USE ONLY
COMPANY NAME: BLP	DISTRICT ID:
	FACILITY NAME: BLP

IV. COMPLIANCE SCHEDULE PROGRESS INFORMATION

1. Dates the activities, milestones, or compliance required by schedule of compliance was achieved/will be achieved:

NA

2. Provide explanation of why any dates in schedule of compliance were not/will not be met: NA

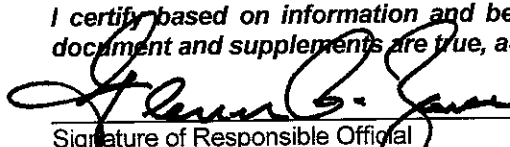
3. Describe in chronological order preventive or corrective action taken NA

V. COMPLIANCE CERTIFICATION

1. Was source in compliance during the reporting period specified in Section II of Form V-K1?
☒ Yes ☐ No (If no, see Form V-K3)

2. Is source currently in compliance with applicable federal requirements and permit conditions?
☒ Yes ☐ No (If no, see Form V-K3)

I certify based on information and belief formed after reasonable inquiry, the statement and information in this document and supplements are true, accurate, and complete.



3/11/2013
Date

Signature of Responsible Official

Glenn A. Zane

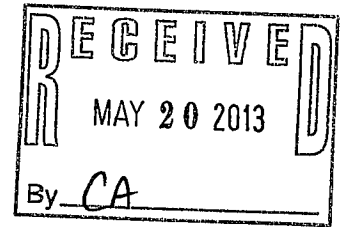
Print Name of Responsible Official

President of BLP General Manager

Title of Responsible Official and Company Name

Telephone Number of Responsible Official: (530) 246-2455

Blue Lake Power, LLC
1615 Continental Street, Suite 100
Redding, CA 96001
(530) 246-2455
FAX: (530) 246-7008



May 16, 2013

Jason L. Davis
Division Manager
North Coast Unified AQMD
2300 Myrtle Avenue
Eureka, CA 95501

Subject: Proposed Amendments to the Blue Lake Power Title V Renewal Permit

Dear Mr. Davis,

Pursuant to our prior discussions regarding the Title V renewal permit (No. NCU 097-12) for Blue Lake Power LLC ("BLP"), we are submitting this letter to propose certain amendments to the Title V renewal application for BLP.

These proposed amendments include the following items:

- 1) Modify the averaging period used to determine compliance with the Best Available Control Technology ("BACT") emission limit established for oxides of nitrogen ("NOx") and carbon monoxide ("CO"). BLP requests that the averaging period be changed from a rolling 3-hour average to a block 24-hour average where the 24 hour block period begins at 00:00 hours and ends at 23:59 hours each calendar day. No change to the quantity of pollutant per unit of heat input (lb/MMBtu) limits are requested at this time.
- 2) Add new short term (pounds per hour) and long term (tons per year) emission limits in amounts equal to the potential to emit for the biomass boiler unit as identified in the renewal application. These limits are intended to ensure compliance with previous BACT determinations while also ensuring compliance with ambient air quality standards.

Suggested language for incorporating these requirements into the Title V permit is as follows:

74. The Permittee shall not discharge pollutants into the atmosphere from the Boiler S-1 in excess of the following emission limits:

A. Particulate Matter

....

B. Carbon Monoxide – The Permittee shall not discharge carbon monoxide (CO) into the atmosphere in excess of the following limits:

- i. 1.0 lb/MMBtu determined on a block 24-hour average basis. A block 24-hour average is defined as the arithmetic average of the hourly emission rates of a unit as*

May 16, 2013

measured over 24 one-hour periods, daily, from 12:00 AM to 11:59 PM, excluding periods of system calibration.

ii. 3.0 lb/MMBTU for any 1-hour average.

C. Nitrogen Oxides - The Permittee shall not discharge nitrogen oxides (as NO₂) into the atmosphere in excess of the following limits:

i. 0.15 lb/MMBtu determined on a block 24-hour average basis. A block 24-hour average is defined as the arithmetic average of the hourly emission rates of a unit as measured over 24 one-hour periods, daily, from 12:00 AM to 11:59 PM, excluding periods of system calibration.

ii. 0.45 lb/MMBTU for any 1-hour average.


75. The Permittee shall not discharge pollutants into the atmosphere from the Device S-1 (Boiler) in excess of the emission limits listed in Table 4.2 below.

Table 4.2 Device S-1 (Boiler) - Emission Limitations

Pollutant	Emission Rate		
	Lb/Hour	Lb/Day	Tons/Year
CO	555.0	4,440.0	810.3
NO _x	83.25	660.0	120.6
PM _{2.5}	22.2	177.6	32.4
PM ₁₀	22.2	177.6	32.4
VOC	13.9	111.0	20.3
SO _x	9.4	75.4	13.8

Please contact me if you have any questions regarding these proposed amendments.

Sincerely,


Glenn Zane
President of Renewable Energy Providers, Inc., the Manager of BLP LLC

cc: Joel Lepoutre, PurEnergy
Randall Paterson, Blue Lake Power
Bob Escalante, RVE Consulting
Jeffrey Adkins, Sierra Research